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## THE SERABIT EXPEDITION OF 1930

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### I

#### INTRODUCTION

KIRSOPP LAKE

ONE of the incidental, but, as it proved, important results of the Harvard Expedition to Mount Sinai in 1927 was the rediscovery of the Sinaitic inscriptions on Serabit el-Khadim, a desolate mountain in the interior of the peninsula, rendered famous by the ruins of a temple of the Egyptian goddess Hathor and by many exhausted turquoise mines.

Close to one of these mines Professor Flinders Petrie found in 1906 some fragmentary inscriptions in an unknown script, which he surmised to be Semitic. Dr. Alan Gardiner, the English egyptologist, guessed that a recurrent combination of symbols might be the word Ba'lat, and submitted this suggestion to Sir Arthur Cowley, Bodley's Librarian at Oxford, who approved of it and tentatively identified several more letters.

In the succeeding years a series of scholars worked on Petrie's notes and it appeared more and more probable that the theory was essentially correct, that the Sinaitic script was a Semitic

alphabet derived by acrophony from Egyptian hieroglyphs, but it was obvious that real progress could not be made unless the inscriptions could be brought back to Cairo or more accurately studied *in situ*. At this stage the Harvard Expedition of 1927 happened to pass through Cairo and was persuaded by Dr. Gardiner to visit Serabit. It rediscovered and took back to Cairo the fragments which had been left behind, and one of its number, Mr. Johnson, found two more inscriptions still *in situ* in the mines.

Lack of time and of provisions prevented our staying more than a few hours, but we were convinced that there was more to be found if the whole area were searched. Our results were edited by our friend Father R. Butin of the Catholic University at Washington, now Provincial of the Order of the Marists, and were published in 1928 in the Harvard Theological Review.<sup>1</sup>

Like ourselves, Father Butin was anxious to obtain more material. We discussed the matter with Mr. Carl T. Keller, Harvard '94 — the class of which I have been made an adopted member — and through Mr. Keller's help, our share of the expense of another expedition, planned for 1930, was provided by members of the class. Father Butin also received a similar amount from a generous benefactor of the Catholic University.

We decided that it would be desirable to take with us an arabist, a surveyor, an egyptologist, and a photographer. The friendly coöperation of the Dominican École Biblique in Jerusalem supplied us with a surveyor in Father Barrois, professor of Semitic archaeology at the École. We hoped to persuade Father Savignac of the same institution to come with us in order to study the Nabataean inscriptions, but he was prevented from coming, and we had to content ourselves with photographing many of those inscriptions which we found in the valleys. Most of them probably have no great value, but

<sup>1</sup> To the literature on the subject mentioned in the Harvard Theological Review, XXI, 1928, pp. 1-3, 9-11, and in Revue Biblique, 1930, p. 146, should now be added articles in the Revue Biblique, 1925, pp. 597 ff.; 1927, pp. 275 ff.; 1928, pp. 158 ff., 613 ff.; 1930, pp. 146 ff. (with a full bibliography); also articles by A. E. Cowley, Journal of Egyptian Archaeology, 1929, pp. 200 ff., and by J. Leibovitch, Zeitschrift der deutschen Morgenländischen Gesellschaft, 1930, pp. 1 ff., as well as R. Weill, La presqu'île du Sinaï, Paris, 1908.

if any arabist ever wishes to study Nabataean graffiti our photographs may give him some unpublished material.

The photographic and recording help we needed was supplied by Mrs. Robert W. New, a Guggenheim Fellow, who is coöperating with us in our publications of Greek, Syriac, and Georgian manuscripts, and is a skilful photographer.

The egyptologist was more difficult to find. There are many scholars in Egypt, but they are generally busy with arrears of work for their universities and publishers. At the last moment, however, we found Professor A. de Buck, an old pupil of mine, who is now a professor of egyptology and divides his time between Leiden, Cairo, and Chicago. He consented to be our guest at Serabit and look after egyptological problems.

To go to Serabit is only possible with a considerable supply of food, camels, and Arabs. To collect the camels and the Arabs can be done only in the neighborhood. If it had not been for the good offices of the Sinai Mining Company,<sup>2</sup> and especially for the great personal exertions of Mr. Mostyn Hoops, it would probably have been necessary to get them at Suez and go the whole way on camel-back. The Mining Company, however, most generously placed their resources at our disposal, so that we could travel all the way from Suez to Abu Zenima on their steamer, twelve miles further by their railway, and still twelve miles further by auto-truck. The result of their kindness was that we were enabled to leave Cairo on February 4, 1930.

On the evening of the sixth of February, we left Suez for Abu Zenima, which was reached at six the next morning, and on February 8th we left for Serabit. We went slightly out of our way in order to visit Bir en-Naşb, as we were especially anxious to fulfil a small commission for Mr. Jenkins of the Department of Mines in Cairo. He had asked us to investigate for him some heaps of alleged slag, said to be about a hundred yards from the well. These we found without trouble, and took photographs and specimens. They present a curious problem: subject to the opinion of experts it seems clear to us that these heaps consist partly of lumps of pure manganese, partly of slag with obvious

<sup>2</sup> We wish to emphasize how much we owe to the kindness of the Sinai Mining Company, and especially to Mr. Hoops, the financial agent at Umbogma.

traces of copper. The whole district of Bir en-Naşb is full of manganese ore, but there is little or no copper, and still less any extensive vegetation which would have made it a suitable place for smelting copper. Nevertheless the evidence is unmistakable that there was a large copper foundry at Bir en-Naşb. Were there really copper deposits here which have been so completely worked out that no trace of them remains? It does not seem very probable.<sup>3</sup> The alternative is to suppose that copper was brought to a district containing manganese because the original coppersmiths of the region found that there was some advantage to be gained by slagging their copper with manganese ore. Are there any traces of manganese-copper having been used by the Egyptians? So far as we know, there is not the slightest evidence of this — but also, so far as we know, no one has ever investigated ancient Egyptian metal-ware with this possibility in view.

Later on we found traces of a similar juxtaposition of manganese ore and copper slag in the Wadi Umm Rinna and on the Serabit plateau. If the evidence were not decisive that the mines on Serabit were turquoise, it would be tempting to suggest that they were copper, but the only certain copper mines in the Sinaitic peninsula are many miles away. Why anyone should have used the top of Serabit for a copper foundry is entirely obscure to us.

We had no serious difficulty in reaching Serabit, and pitched our camp at an old turquoise mine near the temple of Hathor. On February 12th the regular division of labor began: Blake and Butin worked over the mines, de Buck studied the Egyptian inscriptions, Barrois began a survey, Mrs. New and I photographed and kept the records.

In this camp we all stayed until February 25th, and Fathers Butin and Barrois some days longer. It was not exactly luxurious, and on two days when it rained it was extremely uncomfortable, as we had to spend the whole time in the cave, in which it was impossible to stand upright except in a few spots. The cooking was shared by Professor Blake and Mrs. New, and con-

<sup>3</sup> Later on, Professor Blake found traces of copper carbonate in one of the Serabit mines; but it had not been worked.

sisted chiefly of rice, with canned meat dissolved in tomato-sauce and curry-powder.

Systematic searching of the district led to the discovery of some twenty extra inscriptions, all unfortunately fragmentary. It proved possible to take them all to Cairo, and they are now deposited in the Egyptian Museum. A fuller statement of their nature, with tracings and photographs, will be found in Chapter IV by Father Butin. Three inscriptions, however, still remain at Serabit. The two in the mines could not be cut out without more apparatus than we possessed. It is extremely likely that any amateur attempts at cutting them out would bring down the roof of the mine on the heads of the operators. It would be possible to do the work in safety if the roof were first propped up by stone pillars or by wooden supports, but only a professional miner ought to attempt this work. There is also a graffito outside Mine L which might perhaps be cut out, but this was only discovered by Father Butin on the last day, after the rest of us had gone, and the work could not be attempted.<sup>4</sup>

A most interesting, and perhaps the most important, discovery was made in Jerusalem some weeks later. When Father Butin was in Palestine he was shown a potsherd inscribed with three signs which he identified as Sinaitic. This led to consultations with experts as to the date of the pottery, and they placed it in the middle bronze age, about 2000 B.C. The rubbish heap on which it was found is at Gezer. So far nothing more of the same kind has been found there, and this inscription therefore remains the single piece of evidence to suggest that Sinaitic script may have been used in Palestine as well as in the Sinaitic peninsula.<sup>5</sup> The bearing of this and of the new inscriptions from Serabit on the nature of the language and the value of the symbols is discussed by Father Butin. It will be seen that though it seems increasingly probable, and indeed almost certain, that the language is Semitic, there is still doubt about the value of some of the symbols, and the meaning of the groups of signs is often very uncertain.

<sup>4</sup> We endeavored to find and photograph this graffito the following year, but a prolonged search was unsuccessful.

<sup>5</sup> See Bulletin of the American Schools of Oriental Research, February 1931, pp. 27 f.

It is impossible to spend a fortnight on the top of Mt. Serabit without becoming interested in the temple of Hathor,<sup>6</sup> which is so spectacular a feature of the district. In Chapter III Mrs. New has discussed some of the problems connected with it, for admirable as Petrie's work was, he has scarcely said the last word, and it is highly desirable that some day the floor should be laid bare by moving the large pieces of broken columns and walls which now cover it in every direction.<sup>7</sup> The clearing of the site would only require some relatively simple tackle and would not take very long, as there is of course little in the way of accumulation.

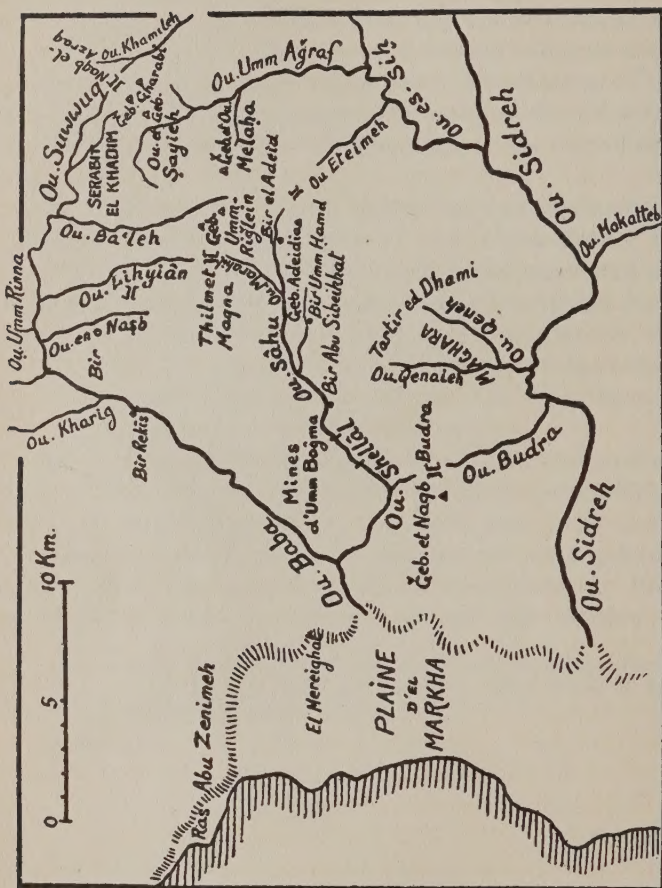
One of the purposes of the expedition was to obtain a more accurate map of the neighborhood, and to this Father Barrois devoted most of his time. The result is the chart and the discussion in Chapter II. The chart was made by the Egyptian Geographical Survey on the basis of Father Barrois' original drawing. We are very grateful to the Survey for the help which it so generously gave us. It will be seen that the previous maps of Serabit were somewhat inaccurate.

Finally, in the 'Gully of the Ass' Father Butin found a series of previously unknown Egyptian inscriptions and graffiti, which Professor de Buck copied on the spot and which were also photographed. Some of these photographs are reproduced in plates III, IV, but the full results will be published by Professor de Buck, whose study of them is not yet quite finished.

<sup>6</sup> Petrie copied the inscriptions in the cave and it was formerly impossible to photograph there. We finally succeeded in getting some negatives of part of the inscriptions; these are reproduced in plates VIII, IX.

<sup>7</sup> See plate VII.





THE MINING DISTRICT OF SINAI

## II

THE MINES OF SINAI<sup>1</sup>

A. BARROIS

The district which constituted the field of our investigation is situated on the western slope of central Sinai facing the Gulf of Suez. The remains of ancient mine-workings are divided into two groups of unequal importance: the northern group, of which the numerous openings lie north and south of the upper course of Wadi Baba, and to which belong the mines of the plateau of Serabit, and the southern group, confined to the turquoise galleries of Maghara. The two groups are included in a rectangle which measures about 35 kilometers from east to west and 25 from north to south. These distances are not very great, but the difficulties of travel in these sections are increased by the windings of the more or less passable wadis and by the barriers of the water-sheds. It seems that in antiquity this was the only mining-basin, and the situation has not changed very much. Without attempting to speak of the attempts of Major MacDonald and his successors to revive the working of the turquoise beds of Maghara — attempts that ended only in a general massacre of the antiquities of the region and in the exhaustion of the miners' funds (which was wholly to the good of archaeology), I must mention the important enterprise of the Sinai Mining Company, which in the very heart of our district engages in the extraction of manganese, a material unknown to the ancients but more and more used in modern metallurgy. It is our duty to acknowledge the great kindness of the engineers and of the personnel of the mines for enabling us to fulfil our mission under exceptionally favorable circumstances.

The monotony of the trip from Suez by land was spared us, thanks to the little steamboat of the Company, the *Argyle*. It brought us, after a night's journey, to the base of Abu Zenima, where a wharf built in deep water near the coral reefs that run along the coast allows vessels to come alongside and load the

<sup>1</sup> This chapter of the present Report is slightly abridged from the article 'Aux Mines du Sinaï,' by Father A. Barrois, in the *Revue Biblique*, 1930, pp. 601-621.



manganese for Sheffield. From the port the narrow-gauge railroad of the Company crosses, by means of a cutting which is also used by the road from Suez to the monastery of St. Catherine, the narrow space between the sea and Jebel Nakhel and enters the great coastal plain of el-Markha. From there on, while the road proceeds south to the mouth of Wadi Sidra, the railroad bears toward the east so as to connect, at the foot of the mountain, with the terminus of the aerial cable-railway by which the ore is brought from the beds of Umm Bojma. About two kilometers to the south is the mouth of Wadi Baba, still, as always in the past, the principal gateway to the interior. By it the caravans brought copper ore from Wadi Kharig and from Wadi Umm Rinna. The ore was smelted at the mouth of Seil Baba, where the humidity sustained a vegetation of bushes that provided the fuel necessary for the operations. Heaps of slag, containing considerable manganese, unutilized by the ancients, and some traces of copper oxides, are to be seen there today. In the lower part of its course Wadi Baba takes the form of an abrupt gorge, dug out by the waters to the level of the granite base of the mountain. Further up, beyond Bir Rekis, the valley widens into a large sandy plain, very well developed at the level of Serabit el-Khadim, where it is joined by the wadis that come in from the north and the south along faults produced by the dislocation of the plateau and its tilt toward the west.

It was not, however, by means of Wadi Baba that we decided to gain entrance to the interior of the peninsula, but by one of its tributary streams, Wadi Shellāl, which joins it just before its débouchement into the plain of el-Markha and has a course similar to it — even more turbulent in the zone of the gorges, the torrential erosion having done its work less completely and the faulting having been more severe. In the lower gorges of Wadi Shellāl, and close to its junction with Wadi Baba, are found Nabataean graffiti, which indicate that this route was used in ancient times as a means of entering the peninsula: it was the way to the *naqb* Budra and so into the drainage-basin of Wadi Sidra. But the steep walls of the impracticable gorges that separate the lower course of the Shellāl from its upper basin forbid the idea that that wadi was ever used in its whole length:

to enter the country to the east Wadi Baba was the only route. The high land which separates the lower courses of the two valleys forms the mining district of Umm Bojma, where the Sinai Mining Company has its principal manganese mines. The stratigraphy is shown with a rare clearness. Apart from local dislocations and accidents it is the same for the whole sector. On the granites which form the basic rock of the plateau lies a compact mass of sandstone variously colored by oxides. At the contact of this sandstone with the carboniferous limestone which overlies it are found metalliferous beds — copper in small quantities in the form of carbonates (malachite) and especially the iron ores and manganese now worked. Above the limestone are evidences of a blanket of carboniferous sandstone, which formerly must have covered the entire plateau but now remains only at certain points and is frequently crossed by basaltic dikes.<sup>2</sup> The gorge of Wadi Shellāl, formerly impracticable for caravans — in places it is scarcely wider than the Siq of Petra — has been made passable by the persistence of the engineers of the Mining Company, who have succeeded in making a route in bold zigzags that ascends a side valley and permits their trucks to gain access to the mines or to go on straight ahead to the upper basin of the wadi. Narrow passages have been broadened; cascades have been surmounted by means of inclined planes of granite blocks which jolt the cars uncomfortably; sandy bottoms are crossed on wire netting.

This trail, primitive as it is, requires constant care and maintenance; the 'seils,' or torrential cloudbursts, that break across the gorge in winter carry away the wire netting, and wash and shift the paving-blocks of the inclined planes. In February, 1930, while a small Ford truck belonging to the Company jolted us toward the upper gorges, the road was under repair for the fourth time that season. This is not peculiar to the trail of Umm Bojma: the Egyptian road to the convent of St. Catherine has had to submit to the same fate, the roadway having been broken

<sup>2</sup> See the remarkable work of John Ball, *The Geography and Geology of West Central Sinai*, Cairo, 1916, and the geological map which accompanies it. This map is the only survey on a small scale (1: 50,000) of this part of Sinai. Unfortunately it does not extend beyond the eastern part of the temple of Serabit el-Khadim and the naqb Budra to the south.

by the wadis in a hundred places and the wire netting swept down into the coastal plain.

The automobile brought us upstream in the direction of the gorges of Wadi Shellāl to a point near a little palm-plantation, revealing the existence of a considerable subterranean body of water, which is also tapped and pumped for the needs of the mining-camp of Umm Bojma. Our camels and guides awaited us; the latter, Arabs of the Aleiqāt tribe, had encampments in the regions we were to traverse, hence the special value of their knowledge of places and names, which proved to be in almost complete accordance with Ball's map.

In its upper course, practically dry since the summer of 1914, above the gorges and beyond the Bir Abu Sibeikhāt, Wadi Shellāl is transformed into a large valley, with a sandy bottom and rich in vegetation: acacias, seyals, retems, and thickets of ramuth, very much appreciated by the camels.<sup>3</sup> In this part it is called Wadi Sāhu. There are a good many encampments of nomads, who have their cemetery here with its tombs grouped about the white cupola of Sheikh Ḥashash. Before the improvement of the gorges of the Shellāl, the basin of Wadi Sāhu was accessible by the crest, where a series of poor passes unites it to the drainage-basin of Wadis Umm Ajraf, Siḥ, and Sidra. The main road runs to the north, and connects Wadi Sāhu with the basin of Wadi Baba. A little more than a kilometer to the east of the Sheikh Ḥashash the path forks and follows the valley of Wadi Marahil, which bends to the left. Gaining the upper part of the valley, we scale a picturesque sandstone cliff where the Nabataeans have recorded their passage; this pass, practicable even for camels, is unanimously called by the Arabs Thilmet Maqna, and through it the trail descends again by the great north-and-south fault utilized by Wadi Lihyān and so joins the upper course of Wadi Baba.

However, it was not by this path that we intended to rejoin the traditional route to Serabit el-Khadim. We wished to visit the surroundings of Bir en-Naṣb in the middle of a valley west of Wadi Lihyān and parallel to it. A tolerably well-used path crosses the ridge which separates the two faults and gives easy

<sup>3</sup> Rāmūth, dialectal form of the literary rimth, a kind of salsuginous plant.

access to the bir, an important watering-place which supports a few palm trees and supplies irrigation for wretched crops. The desert-like vegetation — acacias and bushes — and the relative abundance of water allowed the ancients to establish there a centre for the treatment of the ore collected in the surrounding territory, the presence of which is attested by piles of slag. This slag is like that already pointed out at the mouth of Seil Baba on the edge of the plain of el-Markha: it contains a rather large proportion of impure iron, with unextracted manganese and copper, and Professor Ball recently found a little ingot of copper left by mistake.<sup>4</sup> The copper seems to have been worked most, save at Serabit el-Khadim, where the extraction of turquoise was the main industry. We will merely mention two mining-centres which give evidence of ancient workings. One is the basin of Wadi Kharig, tributary of Wadi Baba from the north, somewhat down stream from the mouth of Wadi en-Naşb. The dislocation of the geological strata by a north-and-south fault, with a tilt to the west, has brought to the surface several important beds of ore. The iron and manganese were not worked, but the copper ores, principally carbonates, were utilized by the ancients despite their weakness in dealing with fine metal. We need, however, to remember the difference in the requirements of ancient and modern metallurgy in order to understand why certain beds, today neglected by our prospectors, were formerly actively worked and sufficed to supply the demands of industry. Reaching Wadi Baba from Bir en-Naşb and continuing our course, we came, after three or four kilometers, to the mouth of Wadi Umm Rinna, another tributary from the north and likewise due to a fault, which allows access to a second mining-centre, pretty much like that of Wadi Kharig. From it was taken malachite, less used for jewelry than for the preparation of green collyrium<sup>5</sup> from the copper salts. Even today important beds of manganese have been left intact. A westerly branch of Wadi Umm Rinna is the way to a pass, today ren-

<sup>4</sup> Ball, p. 13.

<sup>5</sup> A. Lucas, *Ancient Egyptian Material*, London, 1926, pp. 64, 83, 143, 147, 216. The presence of malachite in the mines of Wadi Kharig and of Wadi Umm Rinna is mentioned by Ball, pp. 188-191.

dered difficult by landslides, into the plain of Debbet el-Qeri, the western portion of the great sandy expanse of the Debbet er-Ramla which extends to the foot of the distant bluish barrier of the Tiḥ. Graffiti and sketches of animals, camels, wild goats, dogs, and horses indicate that this pass was frequented by Nabataean caravan leaders. Nearby, small modern structures of stones set without mortar, in which the Arabs store barley and a few miserable provisions, recall certain types of 'nawamis' in the south of the peninsula.

Near the junction of Wadi Umm Rinna, Wadi Baba spreads out in a fan of broad sandy wadis, encircled by mountains of rose sandstone — and loses its name. The Arabs themselves do not agree on the name to be given the principal bed. We leave on our left Wadi es-Siḥ and Wadi Abu-Maraj-et-Takhtani, and follow for some hundred meters the lower course of Wadi Ba'la,<sup>6</sup> which runs from south to north, separating the two distinct peaks of Umm Rijlein from Jebel Melāḥa and then forming the western limit of the plateau of Serabit el-Khadim. Turning eastward after passing pitiable plantations, just previously destroyed by the locusts, we soon emerged on the great sandy plain of Wadi Suwwuq (one of the principal branches of Wadi Baba), which stretches to the foot of the northern cliffs of the plateau of Serabit. The plain is divided into a series of ridges by the valleys of erosion which slash its surface. Through one of these valleys — valley number III of Petrie's plan, the Khesif eṣ-Ṣeghair — access is possible, by a steep incline, to the summit of the plateau. It was by this trail that the expedition of 1905, and later Professors Lake and Blake on their first visit, brought down the antiquities and loaded them on their camels. Generally the passage is impracticable for beasts of burden because the great cascade which cuts the valley must be crossed by means of a veritable ladder cut in the sandstone by nature, the erosion having attacked the several strata in varying degrees. The floods of water that sweep the valleys of the plateau of Serabit in winter — the late March rains allowed us to witness

<sup>6</sup> Concerning the pronunciation there is no doubt. I do not know the origin of the strange spelling of Wadi Bateh given by Petrie and Weill. The name was not even known to the Arabs who accompanied us.

this spectacle — gather in front of the cliff in a sort of natural channel, which, a little lower down, joins the principal bed of the Suwwuq, being separated from it above by sand-hills, bare except for a few scattered brooms. Some writers have given to this channel the name of Wadi Serabit el-Khadim, but, if we may believe our guides, the term is incorrect: the name Serabit el-Khadim must be reserved exclusively for the plateau; the sandy plain which extends to the north and also the branching wadis which etch it bear in common the name of Suwwuq.

Independently of the mines, this valley, even within our era, must have been a much frequented entrance to the interior, to judge by the numerous Nabataean inscriptions carved along the side of the cliffs which bound it on the north.

Encumbered by our baggage, with provision for a month's encampment, we could not think of scaling directly, on its northern edge, the plateau of Serabit el-Khadim. A détour of one day was necessary in order to reach Wadi Şayia to the south of Serabit, where a path, improved by Petrie, allowed the camels to climb to the mines. For this it is necessary to go around the solid mass of the Jebel Gharabi, which adjoins toward the east the plateau above which it proudly towers. The path ascends to the initial fan of the Suwwuq, then descends into the sands of Wadi Khamîla, which is soon left in order to climb the last buttresses to the south of the Gharabi, and so to the west in the direction of Wadi Umm Ajraf (in its upper course known as Wadi Şayia), which is covered by the ubiquitous Nabataean graffiti. Ascending to its source the wadi, which is dominated on the north by the enormous sandstone pyramid of Jebel Şayia, one finds himself at the foot of the scarps south of Serabit el-Khadim, while the other limit of the valley is formed by the lower slopes of Jebel Melah̄a (1,096 meters high), incorrectly named on Ball's map Jebel Serabit el-Khadim. Petrie's path having been completely destroyed by winter rains, a half-day's work was necessary for our beduin to put it into shape, and not until the next day, the fifth since our landing in Abu Zenima, was our caravan installed on the plateau, in an ancient mine, opening on the Khesif eş-Şeghair close by the temple of the 'Lady of Turquoise.'

The plateau of Serabit el-Khadim has been frequently described.<sup>7</sup> It is a massive rectangular bastion, which dominates to the west and north the deep valleys of Wadi Ba'la and Wadi Suwwuq. To the south it is attached to the mass of Jebel Melaḥa by an isthmus less than 800 meters wide, compressed between Wadi Umm Themeyim (a tributary of Wadi Ba'la) and the upper course of the Şayia. Another isthmus, similar but reduced at the summit to a rocky strip a few meters wide, connects it to the southeast with the prolongation of Jebel Şayia and of Jebel Gharabi.

The erosion of the rain has carved in the plateau a series of fan-shaped ravines drained by Wadi Suwwuq and Wadi Ba'la; these ravines deepen so sharply that a little way from their starting-point they cannot be crossed, and they have to be headed by following the ridge along the steep scarps of the Şayia and of the Umm Themeyim, a ridge utilized for a modern path and, as well, for the ancient road of the miners. The ravines are interrupted by cascades due to the varying hardness of the strata. Weill justly remarks in this regard that these "vertical falls of the 'thalweg' show no sign of being reduced by erosion, which will probably never succeed in smoothing the bed where the hard layers occur, for the wearing away of the front wall is always more effective than the deepening of the river-bed above the brink, so that the cascade recedes upstream faster than the bed of the stream is cut down above; this is the explanation of the preservation, and perhaps progressive accentuation, of the great falls which bar the valley in its course."<sup>8</sup> The result is that none of these valleys can be used freely as a means of access from the plain to the plateau.

What was the road of the ancients? It is not likely that they sought out the route to the east of the Gharabi as we have just done; besides, the path up from Wadi Şayia is of recent origin and nothing hints at the existence of a path at the time when the mines were worked. Making the attempt to the west from the plain, the first valley we meet, barred by cascades, offers no

<sup>7</sup> See Petrie, pp. 55 ff.; Weill, pp. 163 ff. The maps which accompany their descriptions are rather inexact and not of much use.

<sup>8</sup> Weill, p. 163.



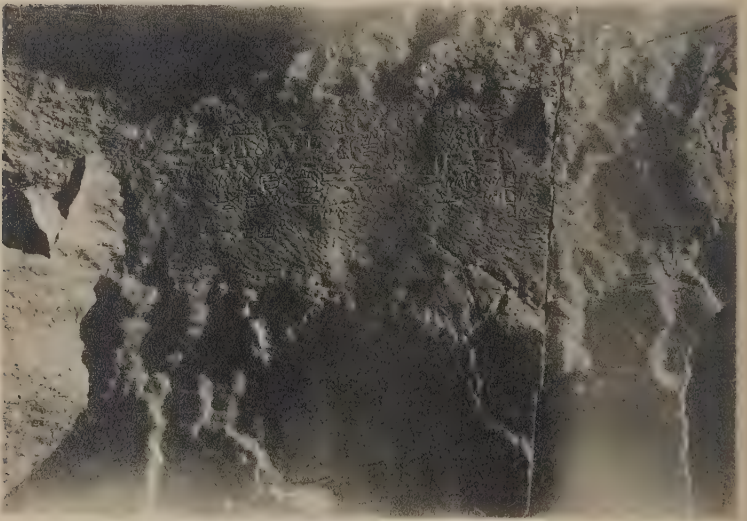
Serabit from the Wadi Ba'ala



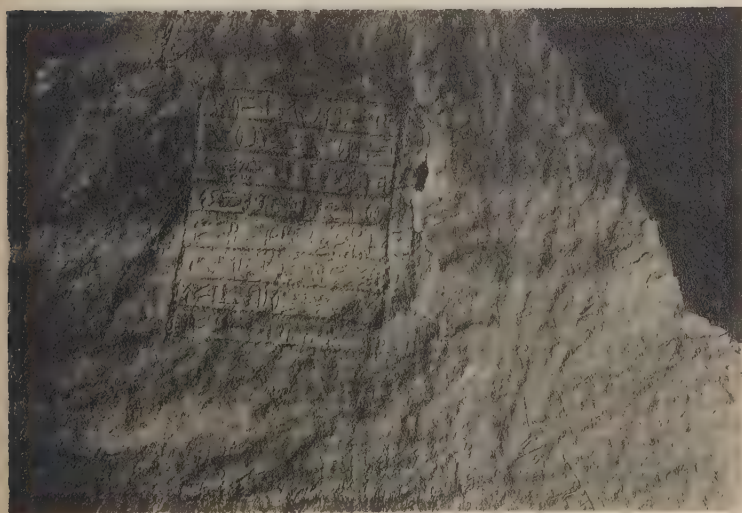
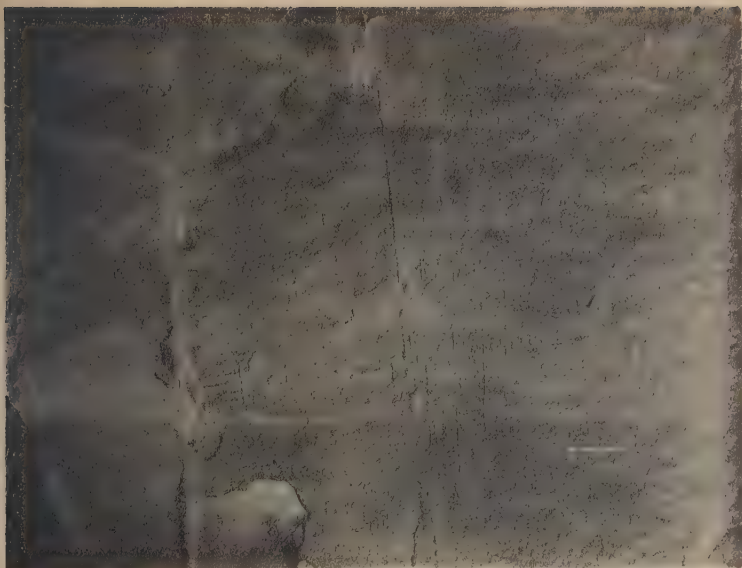
Looking back up the Roq el-'Air



View from "Camp of the Egyptians" showing passes into Wadi Lihyān and Wadi en-Naṣb



Egyptian inscription in the Roḍ el-'Air



Egyptian inscriptions in the Roq el-'Air



View of Temple area from top of mound above Cave of Hathor



"Shrine" on flat area to the northwest of the Temple



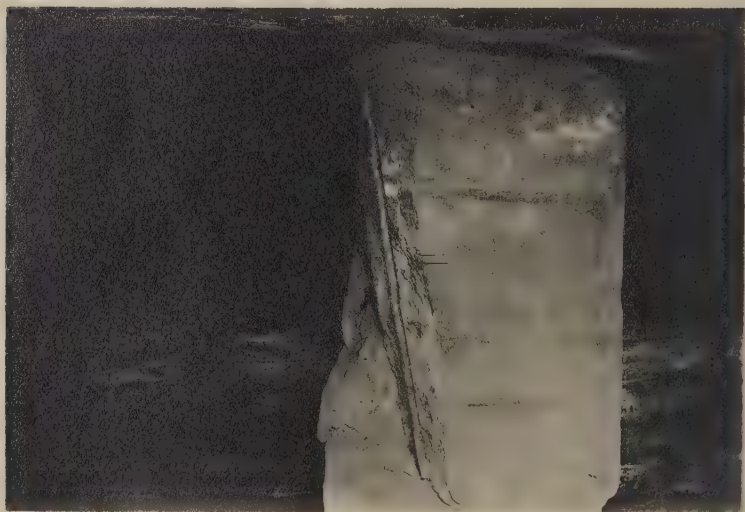
Rock-cut trench near Mine L



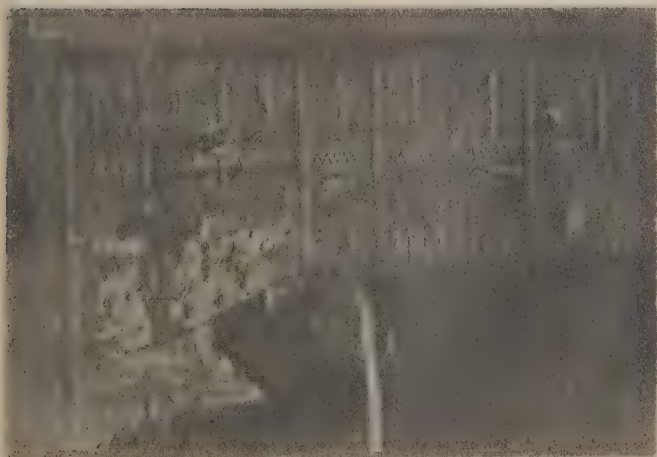
Sunk basin to west of Temple



Partial view of interior of Cave of Hathor



Central pillar in Cave of Hathor



Egyptian inscriptions in Cave of Hathor (lower adjoins upper, to the right)



Fragments of Egyptian inscriptions in the Cave of Hathor

passage. The Arabs call it el-Khesif because of the water which collects after the rains in the pot-holes dug by the torrent below the cascades.<sup>9</sup> A second valley has the same name, but coupled with a diminutive epithet (el-Khesif eş-Şeghair). By this valley (valley III of Petrie) ascends the steep incline already mentioned. It is nevertheless improbable that the Egyptians used it. Apart from the acrobatic feats they would have had to perform to bring up their personnel and material, there is no trace of any evidence of their passage at this point. The same can be said of Wadi Qaṭṭar,<sup>10</sup> indicated by Petrie under the name of Wadi Dhaba, which bends to the north in a narrow defile cut in the rock, as well as of Wadi Tlaḥa,<sup>11</sup> which runs north-northeast and is likewise cut by numberless cascades. All these wadis are tributaries of the Suwwuq. From the west side, to be sure, on the slope up from Wadi Ba'la, a path follows Wadi Umm Themeyim, and by it Professor Ball reached the plateau. But it likewise would hardly be practicable for beasts of burden. There is no evidence of any roadway there in ancient times, and this must be our principal guide in the matter. It is much less important to know if such a route would be strictly practicable than to know if it was actually used, and this we can assert only if we find traces of human activity and artificial objects.

That condition, however, is met by a little valley neglected by our predecessors, who saw in it only a despicable *casse-cou*. Exploring from above, one finds that from the southwest corner of Serabit this valley allows descent to the lower course of Wadi Umm Themeyim, below which is the broad bed of Wadi Ba'la. Mining expeditions have left here positive traces of their passage. Following the ancient path which heads the valleys and from which branch off the various roads leading to the temple and to the mines, one comes out on a small level space where we discovered several fragments of Egyptian stelae and a portion of an inscription in the unknown writing of which

<sup>9</sup> Khasif, 'place where water stands,' hence a well dug in the rock, which always has water.

<sup>10</sup> Qaṭṭar, 'oozing'; from qaṭara, 'to fall drop by drop.'

<sup>11</sup> Literary: ṭaḥ, 'acacia.'

we shall have occasion to speak later. From this level space a zigzag path, almost destroyed by recent landslips but easily capable of being made perfectly practicable, winds over considerable terraces overlooking the little valley toward the south. There the road is broken by the inevitable cascade, but the landings of the cascade are relatively long and the height of its falls not great. With beasts it could not be passed today, but evidently this was not always so. If Weill's theory of the progressive accentuation of the waterfalls is true, then, given a knowledge of certain simple devices, not requiring the explosives which the engineers of Umm Bojma used in opening the route by Shellāl, a mule road is entirely conceivable in this place.

All doubt in this regard is removed by our discoveries just below the cascade. There on the sandstone wall are cut several long Egyptian inscriptions, one of which goes back to Sesostris (Senousrit III, dynasty XII). A neighboring rock bears drawings in outline representing various aspects of the expedition: the boats which ply on the Red Sea, assuring the communication of the Egyptian workmen with the metropolis, the asses to transport provisions and bring back to the sea the precious booty of the expedition. Without waiting for the decipherment of the texts we see in these inscriptions a new landmark of the route to the mines: nothing else in the neighborhood accounts for their existence. On the other hand, they have not been engraved on this rocky wall in order to remain invisible. This ravine, therefore, was the traversed path to the quarries of turquoise. The present-day names are not without interest. The little valley, probably because of the pictures engraved there, is called Rūd el-'Air.<sup>12</sup> The great way of communication which lies below it, and which we followed for a time, Wadi Ba'la, calls to mind the mysterious Ba'lat whom the Egyptians compared to Hathor and invoked under the title of 'Lady of Turquoise.'

<sup>12</sup> Rūd el-'air, 'valley of donkeys.' The term rūḍ is frequently used in the peninsula for the name of an unimportant wadi, a ravine dug by the waters but where little moisture remains; cf. *istarāḍa*, 'to contain water,' used in reference to a valley or a basin.

The stratigraphy of the plateau has been frequently studied in detail, notably by De Morgan and Weill.<sup>13</sup> It corresponds with what has been said of the general structure of the district: a base of granite and gneiss, uncovered at the bottom of the deepest valleys (Wadi Ba'la, Wadi Tlaḥa); then compact beds of carboniferous sandstone of reddish color, in the upper strata of which are found first the turquoise, then a few thin veins and impregnations of copper salts. Immediately above the sandstone a layer of various ores, iron (hematite) and manganese, is to be detected only in isolated portions; some of these have been completely denuded of their calcareous blanket, thus, north of the temple, a hill of black hematite, and southwest of it hillocks of the same material, as also along the right bed of the initial fan of Wadi Tlaḥa.<sup>14</sup> This calcareous blanket, which originally covered the whole plateau, now lies in tatters, forming the tops of the ridges which separate the ravines. The geological series found at Wadi Shellāl is complete at the peaks surrounding the plateau (700–760 meters above sea-level; at the temple 735 meters, according to Ball). At the two sharp peaks of Umm Rijlein (1,017 and 1,037 meters), as well as at Jebel Gharabi, the metalliferous stratum is again covered by an upper sandstone, which forms the summit of the mountain. The same holds good for Jebel Melaḥa (1,096 meters), the outline of whose peaks is broken by basaltic dikes.

The ferruginous beds have never been systematically worked at Serabit el-Khadim. According to De Morgan blocks of hematite have sporadically been extracted to the north of the temple.<sup>15</sup> Moreover, the iron was not used in metallurgy, but chiefly in the manufacture of statuettes and small funerary objects. Nor do the carbonates and phosphates of copper seem, in spite of what De Morgan says (p. 219), to have been much sought for. The Egyptians, at least, paid little heed to them. All their mines were dug in the turquoise-bearing sandstone beds, and we observed that in one gallery an excellent vein of

<sup>13</sup> De Morgan, *Recherches sur les origines de l'Égypte, l'âge de la pierre et des métaux*, Paris, 1896, pp. 219 ff.; Weill, pp. 167 ff.

<sup>14</sup> Wrongly held by certain authors to be piles of slag from the reduction of minerals.

<sup>15</sup> De Morgan, p. 219.

copper had been totally neglected by the miners in their almost exclusive concern with the extraction of the gems.

Most of the mines are simple excavations dug in the side of north-to-south ravines, and open on the level of supposed rich beds. The shallowness of the strata covering the turquoise-bed at Serabit el-Khadim allowed a considerable extension of these excavations without much regard to supports for the rocky ceiling. When support became necessary, a column of sandstone was left, and the work continued. One of the most important and, it would seem, longest worked groups of mines is situated south of the great ridge which separates the two upper branches of the Khesif eṣ-Ṣeghair close to the modern path from Wadi Ṣayia (Mine II). The ridge was attacked at the top from both sides and the two openings joined by a tunnel 65 meters long, which, however, was later blocked by landslips. The tunnel is ventilated midway by a large square well, decorated with hieroglyphic inscriptions, while rock stelae at each outlet of the mine show the work accomplished by the pharaohs of the Middle Empire and resumed by those of the XVIIIth dynasty. Two of these inscriptions portray the king offering worship to the Lady of Serabit, who is represented under the features of Hathor, with cow's horns and wearing a moon-shaped disc. One stele bears the shield of Amenemhat III, the other that of Thotmes IV.

The entire southeastern edge of the platform of the stelae, which dominates the upper course of the Khesif eṣ-Ṣeghair, has been gnawed away by the picks of the miners, who did not have the grace to tell us who they were. In one of these mines we chose our domicile. The greater part of the galleries dug here have collapsed in consequence of an unsufficient system of props, and perhaps also of the attempts of the Arabs to find the blue stone. Just in front of the temple, to the right of the road leading to it, we find on the side of the slope an entrance to a mine in the form of a trench with rock inscriptions; it carries us back to the XIIth dynasty (Amenemhat III).

Another group, and one of the most interesting, comprises Mines XIII and XIV, pierced so as to penetrate the isthmus which separates Wadi Ṭlaḥa from one of the branches of Wadi

Qaṭṭar. These are two large independent subterranean caverns, ventilated by vertical wells dug in the rock ceiling; from them extend narrow radiating galleries at various heights. In both of these mines inscriptions have been cut in the mysterious characters already referred to. A graffito of three letters in the same handwriting adorned even the south front of Mine XIII.

This is the mine in the vicinity of which were found in 1905 several stone fragments bearing similar letters. Some of these tablets are engraved in the form of stelae, and we too succeeded in finding fourteen new ones, some of them in a circle of stones above Mine XIII, the others in various parts of the plateau near the ancient paths to the mines. In view of the uncertainty that exists regarding the decipherment of these inscriptions, is it possible to gain an idea of their origin and eventually of their content? Perhaps; for the monuments left by the Egyptians are not without similarity to them and throw some light on this distant past.

The abundant epigraphical harvest gathered in 1905 by Petrie<sup>16</sup> furnished most interesting historical details regarding the mining activity of the pharaohs. Started in the first dynasties, the mines of Serabit el-Khadim had their first important development under the IIIrd dynasty in the reign of Snefru, then a period of intensive exploitation under the XIIth dynasty. The works, abandoned during the crisis which smote Egypt as a result of the invasion of the Hyksos, were reopened by the pharaohs of the XVIIIth and XIXth dynasties. It was no continuous work, directed by engineers and quarrymen. The Egyptians sent out annual expeditions, and each spring there arrived at the Serabit plateau a large band of workers under the direction of officials and hierarchical scribes in accordance with the peculiar genius of the Egyptian race.<sup>17</sup> A comptroller came, and treasurers, warehouse-keepers, coppersmiths (whose duty was to repair the brass chisel-points used to dig the galleries of the mines), and finally the leader of the party, who directed the extraction of the precious gem, the *mafkat*, a term

<sup>16</sup> Partially published by A. H. Gardiner and T. E. Peet, *The Inscriptions of Sinai*, part I, Egypt Exploration Fund, London, 1917.

<sup>17</sup> Cf. Petrie, pp. 109 ff.

so often mistranslated by egyptologists but which, as Victor Loret has shown, must unquestionably be identified as applying to the bluish or greenish turquoise of Serabit el-Khadim and of Maghara.<sup>18</sup>

Removed for a time from the fertile Nile countries, exiled to this desert of stone, frozen by the violent north wind or burned by a blazing sun, a prey to the never ending uncertainties and anxieties of the mysterious work of the mines, these men felt the need of conciliating by appropriate rites the favor of the local divinity, the goddess of the plateau whose sacred shrine was venerated by the natives.

For she was the dispenser of dreams, and she it was who revealed to the explorers the richest veins of the *mafkat*, that mysterious gem, subject to harsh discolorations which were regarded as diseases, and which could be prevented by the good will of the Ba'lat.<sup>19</sup>

So, all along the path leading to the holy cavern, circles of stone were raised on the sacred land; there the night was passed in the expectation of a dream of revelation, and more than one stele, bearing an invocation to the goddess and provided with a table for the offering, was raised by the Egyptian miners at one of the extremities of these circles.

Not less interesting for this demonstration of piety to the goddess is the curious text published recently by Loret (see note 18). An Egyptian surveyor of the XIIth dynasty who had arrived at Sinai in midsummer had the opportunity, by favor of the goddess, of finding perfectly healthy and perfectly colored stones: "I had come from Egypt," he wrote, "discouraged in soul. It seemed impossible to find [stones] of suitable color. This deserted region is burning in summer, the mountains are [as if] heated with red-hot iron and the colors [of the stones] are spoiled by it." In spite of everything, and beyond all expectation, the expedition was successful: "I had collected this precious gem. I had succeeded better than anyone [before me] and

<sup>18</sup> 'La Turquoise chez les anciens Égyptiens,' in Kemi, 1928, fasc. III-IV, pp. 99 ff.

<sup>19</sup> This is one of the soundest arguments given by Loret for the identification of mafkat and turquoise. We are able to verify the instability of the Sinai turquoise, which easily passes from celestial blue to green, and from green to a dull gray.

beyond all that had ever been commanded. It was impossible to wish for better. The color [of the stone] was perfect and it was a feast for the eyes. The gem was even more beautiful than [if mined] at the normal season! Therefore invocations were repeatedly offered to the Lady of Heaven. Rely then on Hathor. Do it; you will be better off for it. You will succeed better. Good luck to you!"

The Egyptians had identified the local divinity with Hathor. To Hathor was dedicated the temple which, from the period of Snefru (III<sup>d</sup> dynasty), replaced the old high place in front of the sacred cavern, which was itself put in order and decorated with inscriptions. This first temple received the additions of the later pharaohs until it assumed the aspect under which it is seen today: a series of rooms in which the commemorative stelae were set up and which are only an improved substitute for the precinct of the plateau adjacent to the sanctuary at the sacred grotto of the goddess. Her image is found everywhere as a kind of capital, representing the mask of Hathor with the flowing hair and the cow's ears.

To this Egyptian goddess was later added a god Sopdu, who had his cavern also next to that of Hathor, and whose Egyptian origin is likewise problematical. In fact, the articles found in the temple — wash-basins, censers, unmistakable remains of sacrifices and offerings consumed by fire, all suggest a foreign ritual which is much more akin to those of the Semites.

Egyptian documents from the XII<sup>th</sup> dynasty mention the presence of mining expeditions of foreign workers, people from Retenu (whom Petrie recognizes as inhabitants of southern Palestine) and, a little later, Syrians from A'amu. These men took part in the common work and shared the common practices, hence their names have been preserved. Moreover, one of our discoveries seems to eliminate every doubt as to their presence and their Semitic character: it is a sandstone votive offering, found close to the temple, representing a man's head <sup>20</sup> in round relief, with receding forehead and a marked prognathism accentuated still more by a pointed beard. The compari-

<sup>20</sup> See plate XXVIII.

son with Egyptian profiles representing Amorrrhaean prisoners <sup>21</sup> speaks for itself and requires no comment.

These various considerations sustain the hypothesis that these foreigners may have been the authors of the mysterious inscriptions of which I have spoken. They felt at home on reaching the plateau. The practices and the ritual there followed were doubtless more familiar to them than to the Egyptians. They found there the rite of sacred incubation, and, quite like their masters, they cut on the sandstone in their own writing their invocations to Ba'lat. This accounts for several of the inscribed plaques which we found in the stone circles and which are similar to those raised by the Egyptian miners, and also for the fact that several others are shaped in the form of stelae. These circumstances will have to be taken into consideration in all future attempts at decipherment. I cannot enter into the matter here. However, the new documents discovered by our mission — some of them, though fragmentary, remarkably clear — show distinctly the form of the signs, and for certain of these leave no further room for doubt. All the pieces were photographed, and except for two inscriptions in the mine which it would have been dangerous to cut out, all were brought to the Egyptian Museum at Cairo. The alphabetical nature of the mysterious writing can be regarded as a proved fact, and the impression of the Egyptian origin of the signs which compose it has been strengthened. But whatever be the much disputed date of these monuments,<sup>22</sup> it appears increasingly difficult to suppose that this new system of writing was invented there on the spot by Semitic miners in contact with the Egyptians: on the contrary the writing is well stabilized and does not betray the gropings of an initial stage.

What I have just said regarding the inscriptions on stelae and removable sandstone slabs holds good for the inscriptions in Mines XIII and XIV, which bear a relation to the inscrip-

<sup>21</sup> See Canaan, p. 412, fig. 301, from Maspero, *Histoire Ancienne*, II, p. 147.

<sup>22</sup> Father Butin definitely holds to the XIIth dynasty, which was the period of most intense activity at the mines; in it the texts explicitly mention the use of foreign labor. Sethe dates the inscriptions in the obscure reigns of the pharaohs of the XIIIth or XIVth dynasty or even of the period of the Hyksos. Petrie makes them contemporaneous with the XVIIIth dynasty, and places them in the reign of Thotmes III.

tions of Mine II, for example, similar to that of the Sinaitic stelae to the offerings-stelae of the temple area.

Finally, among our most important discoveries, I must mention a statuette, overlooked by Petrie and discovered by Professor de Buck in the very enclosure of the sanctuary. It is decorated in front by an Hathoric column, flanked on both sides by a vertical line of hieroglyphics. On the right side of the pattern can be read an inscription in Sinaitic letters. Is it the desired bilingual inscription? Perhaps. But I confess that the marked inequality of the two inscriptions leaves me skeptical as to the help which they can render to the decipherers, while the bad quality of the sandstone makes both of them almost illegible.

Our sojourn on the plateau of Serabit lasted almost a month. When the work of exploration and the study of the topography of the district was ended, we took a route to the little port of Abu Zenima quite different from that by which we had come. We wished to have a look at the mining establishments of Maghara and to see the present state of things. This less arduous itinerary, often used by the beduin, descends the long valley of Wadi Umm Ajraf, which, under various names, reaches the sea to the south of the plain of el-Markha.

So we resumed our path and retraced our steps the length of Wadi Şayia as far as the enormous pyramid of rock which bears the same name. From there, instead of again climbing the pass to Wadi Khamila, we followed, by a fairly good path, the upper course of Wadi Şayia. This soon widens, and after an abrupt descent to the level of its lower course takes on — under the name of Wadi Umm Ajraf — the appearance of a real Sinaitic wadi, with sandy bed, abundant seyal vegetation, bushes, and, in this season, spring herbage much appreciated by our animals, who had been reduced for a whole month to a meagre fare of the bushes of the plateau. These landscapes of Wadi Umm Ajraf are most picturesque. To the west rises the high mass of Jebel Melaḥa, from which radiate a whole series of wadis: on the other side the strong red of the sandstone hills contrasts sharply with the young verdure of the vegetation. The pyramid of Jebel Şayia can long be seen whenever one looks back. All this

region is frequented. The encampments are established in the side valleys which drain from the summits the water, at first retained in the hollows of the rocks. A small beduin cemetery with a ruined weli marks the end of this more favored section of the valley. Gradually the walls close in, vegetation becomes rare, to the sandstone succeed sinister black or grayish slates, to which the bright touch of a few granite outcrops lends no gayety. It is the course of Wadi es-Sih, which bends to the southwest for four or five kilometers and in its turn changes its name to Wadi Sidra, this latter maintaining a general westerly direction (and keeping the same name) as far as the sea. For about six kilometers the wadi becomes a wild granite defile with a sandy bottom. To the northwest one of its tributaries, Wadi Eteyma, ascends in the direction of Jebel Adeyidia and communicates by a pass with the upper course of Wadi Sāhu. On emerging from this gulf the traveller sees before him a good-sized plain where the local beduin have made attempts at cultivation, but this year the locusts have devastated everything. We passed on our left Wadi Mokatteb, famous for the manifold inscriptions with which the passers-by of every race and language have covered its walls. It penetrates southward into the interior of the peninsula in the direction of Feirān and the monastery. The lower course of the Sidra is followed by the Egyptian road to the monastery; this is a kilometered trail, adapted for the passage of ordinary motor-cars, but at the moment, as a result of the winter rains, it was impracticable save perhaps for six-wheelers, caterpillar trucks, or the extra-high Fords which the Egyptian forces of the peninsula use. At the other end of the plain, which extends for six or seven kilometers, Wadi Sidra is again enclosed between high sandstone walls. To the north towers the high mass of Jebel Safrani, presently the valley broadens and on the left is revealed a little cemetery and a weli, the Sheikh Suleiman. On the right Wadi Qena, with its walls covered by Nabataean graffiti, climbs up to the north. At the end of ten minutes it divides into two branches, Wadi Qena to the right and Wadi Qenaya to the left, enclosing a small hill where the ancient miners of Maghara had their sleeping-shelters and at the foot of which the fantastic

Major Macdonald was established in the days when he dreamt of making a fortune by turquoise-mining.

Beds, rich in gems, are found on the western flank of Wadi Qenaya. But while the beds at Serabit el-Khadim are but little lower than the surface of the plateau, here they are buried under a mass of sandstone fifty meters thick. The ancient miners chiefly employed narrow galleries, which they widened only after having reached a zone of security. Moreover the excavations were filled in again afterward with the excavated material and so the ceiling was supported before the work proceeded further. Although Weill mentions the remains of "some small reduction-chambers, melting-pots with metal still adhering, ingots of metal melted and more or less deoxydized," it seems that the poverty of the ore and the difficulty of extracting copper led the ancients to seek chiefly for turquoise. As at Serabit, the Egyptians have left here traces of their presence; rock stelae from the Ist to the XIIth dynasty successively; after that time the district of Maghara seems to have been definitely abandoned, apart from the expedition of the 16th year of Thotmes III. The cry of alarm uttered by Petrie, in protest at the vandalism of the 'dividend-seekers' and of the Arabs, who even today blow the rocks to powder, has had its echo. The Administration of Antiquities has caused all the monuments to be cut out that are now in safety in the Museum at Cairo; the rock stele of Semerkhet, of the Ist dynasty, has remained intact, protected by its almost inaccessible situation; and so there remains at Maghara nothing to destroy. At the same time the site has lost the greater part of its interest, for the ancient workings have been totally spoiled; the galleries, now enlarged by blasting, show traces of only modern mining-picks and crowbars. In all this destruction the central hill alone has preserved nearly its primitive physiognomy, all but the path and steps put in by Major Macdonald in order to reach the summit which he took for his look-out. It was a well chosen observatory, for the western view embraces the panorama of Wadi Qenaya and the whole frontage of the mines, while on the other side the position overlooks the upper course of Wadi Qena, and farther off, beyond the sandy plain of the

Sidra, can be seen against the sky the distant summit of the Serbal. The entire hill, protected on the north by a wall of defense, was occupied by the sleeping-shelters of the workmen. These are small rectangular enclosures built of rough blocks of sandstone. Petrie, who dug into several of them, found household utensils, buried in the hope of finding them again on the next expedition, such as stone pestles and terra-cotta vases of all shapes and sizes. Father Butin hoped to find Sinaitic inscriptions as at Serabit, but in spite of diligent search his hopes were not realized.

We did not tarry at the mines of Maghara. Continuing along Wadi Sidra, we turned after three-quarters of an hour into Wadi Budra, which ascends north-northwest at the bottom of a very pronounced fault. The profile of the hills which border the wadi on the east shows clearly the dislocation of the cretaceous beds which rested on the sandstone, and their tilting toward the west. This fault runs in a straight line up over the easterly slopes of the high calcareous summit of Jebel Budra. Thence, by a zigzag path, the work of Major Macdonald, to whom for once we were grateful for what he did, we descended again in less than two hours into the lower course of Wadi Shellāl in front of the granite gorges. Our circuit being thus complete, it only remained to wait for the Mining Company's truck, which brought us quickly to Abu Zenima. There we found not only the agreeable silhouette of the *Argyle*, then being loaded, but the comforts of civilization, and especially, at the bungalow of the Mining Company, all the charm of the most generous and cordial hospitality.

COMPARATIVE TABLE OF THE NAMES USED BY BARROIS AND THOSE  
OF FLINDERS PETRIE

<i>Barrois</i>	<i>Petrie</i>
Wadi Sayieh	Wady Umm Agraf
Sandy plain of Wadi Suwwuq	Wady Serabit
Wadi Ba'ala	Wady Bateh
(Petrie's Wady No. 10 [branch of his Wady Umm Agraf] and Wady No. 1 [branch of his Wady Suwiq] do not figure in Barrois's map; they are outside the limits.)	
El Hesif	Wady No. 2
El Hesif eş-Seghaïr	" " 3
Nameless small tributaries of Wadi Suwwuq	" " 4 and 5
Wadi Qaṭṭar	" " 6 (Dhaba)
Nameless tributary of Wadi Qaṭṭar, east of Mines XIII-XIV	" " 7
Wadi Tlaḥa	" " 8
Wadi Umm Themeyim	" " 9
(Wadi Roḍ el-'Air does not figure on the map of Petrie.)	

## Mines

	G
I	Mines with inscriptions, A B C D E
II	
III	
IV	
V mine-shafts with Egyptian	
VI inscriptions	H (?)
VII } quarry-openings	missing
VIII }	missing
IX	F
X	missing
XI	J
XII	K
XIII	N
XIV	L
Speos	M
	Q (rock-shrine)

## III

## THE TEMPLE OF HATHOR

SILVA NEW

On one of the relatively flat projections of the plateau which forms the top of the mountain of Serabit el-Khadim, three days' journey by camel from the nearest point of the coast into the interior of the peninsula of Sinai, stand the ruins of the Temple of Hathor.<sup>1</sup> Near it are turquoise mines exploited by the Egyptians from the third to the eighteenth dynasties, and probably also worked intermittently by the local tribes. But the mines were not the *raison d'être* of the temple, although the goddess of the temple was certainly worshipped by the miners. In the Wadi Maghara also there are Egyptian turquoise mines, and until they were either destroyed or taken away to museums there were inscriptions, carved to record Egyptian expeditions to them. But there is no temple at Maghara.

And so arises the first question,—one which Petrie seems to have answered quite satisfactorily,—why was a temple ever built on the top of Serabit? The answer is that there was already a shrine there when the Egyptian kings first sent their workmen to Sinai in search of precious stones. The Egyptians, living in the valley of the Nile, did not build temples on inaccessible heights, but it is thoroughly Egyptian to accept the divinity of a locality and incorporate it with one already known and revered, thus risking nothing and ensuring the friendliness of both gods. Moreover, Petrie seems justified in his assertion that what can be discovered of the ritual of the temple on Serabit in the Egyptian period is Semitic and not in the least typically Egyptian.

The temple was at first, in all probability, only a shrine<sup>2</sup> cut in the side of a small mound which rose at one point above the general level of the plateau at the top of the mountain. But during dynasties XII and XIII<sup>3</sup> it was repeatedly rebuilt,

<sup>1</sup> See plate I.

<sup>2</sup> See plates II, V.

<sup>3</sup> The first indication of Egyptians on Serabit is a hawk of Snefru, the last king of dynasty III, but the earliest extant parts of the temple belong to dynasty XII. Until

enlarged, and adorned, until in the time of Queen Hatshepsut and her nephew Tahutmes III it was a fairly large, elaborate, and imposing structure. Yet it was on a mountain in the interior of the Sinai peninsula, and while at some periods there were expeditions in search of turquoise almost every year, there were long intervals when the district was left to its own local inhabitants. Was the temple also abandoned by Egyptians during these intervals, or was there a small staff which remained more or less permanently on the mountain?

In the early period when there was only the sacred cave, or even when the first rooms had been built in front of it and some of the stelae had already been set up, perhaps no guardian was needed and no one had the function of overseeing the ritual of the place. Moreover, if the goddess was a local deity her shrine would be in little danger of desecration until her own people had forgotten her. Perhaps in the beginning there were even Semitic guardians and priests. But, whatever her origin, the goddess of Serabit became famous in Egypt; some who could never come to Sinai themselves sent her offerings, and others made private pilgrimages to her temple. It is difficult to believe that when this was so the temple was left to stand empty and unattended, that there was no one there to receive the gifts, to direct the ceremonial, or to care for the needs of the pilgrims. Petrie believes that the small rooms which form the end of the temple area, all of which are somewhat later than the sanctuary, the portico, and other parts of the temple proper, are for travelers to sleep in in order that they may dream dreams under divine inspiration. Is it not possible, however, that these were the quarters of the permanent functionaries of the temple? If so, the fact that the rooms were added to under successive kings would indicate the growing wealth of the temple and its increasing staff.

But if this be accepted, another problem arises. The officially organized expeditions went out for comparatively short periods, and provided for food and water in the same way as do modern

the time of Rameses VI inscriptions on stelae and parts of the temple continued to be cut. Then they abruptly cease. Not a trace of any further Egyptian interest in the place can be found.

expeditions to the same region. Many of the monuments both at Serabit and in the Wadi Maghara give some of the details of the complicated organization needed for such an enterprise, although frequently the most interesting are omitted. We learn that they had boats and donkeys for transport, various officials with definite functions, different classes of workmen for different tasks, and so on. But there is nothing about those who were permanently attached to the temple, although workmen taken along to rebuild it or to carve inscriptions are mentioned.<sup>4</sup>

Anyone living on the top of Serabit now is more than one full day's journey from Bir en-Naṣb, the nearest trustworthy source of water if camels are used for transport. Donkeys, the pack-animal that the Egyptian inscriptions always mention, are somewhat faster, but not enough so to simplify the bringing of any large supplies of water to the temple. Nor can the sandstone surface of the summit be cultivated, although in one hollow near the temple it is possible in a wet year to see scratches made on the surface of the thin soil by local Arabs in the hope of some kind of a crop, and there are always some thorn bushes on which a few animals can graze for a short time. But there is no indication that it was ever possible to raise enough food on Serabit to support life over even brief periods. Experts seem to believe that three or four thousand years ago there was probably a great deal more scrubby wood in the valleys than is found today, but apparently they are quite convinced that at no time within the historical period was there any more soil on the hills than there is now, or even much more tillable land in the wadis. Life at the temple, therefore, can only have been possible by ensuring a steady supply of food and of water from the valleys — or perhaps, in the case of food, from even farther afield. Under any circumstances it must have been a life of some privation, with few luxuries of any sort.

With the problem of water in mind we searched the region for traces of what might at one time have been springs, or for some system by which the rain which falls quite heavily during several days in a normal year might have been collected and pre-

<sup>4</sup> One inscription mentions fifty 'people of the temple of Amen' as part of the expedition. What were their tasks?

served. Of the former there was certainly no trace, but for a time we believed that we had found the latter. To the north and to the southwest of the temple, on ground with a moderate slope, we slowly traced large flat cuttings in the rock. At first sight these seemed no more than the rough breaks in the sandstone surface, caused by erosion, that are a characteristic feature of the hills of the whole district. More careful examination, however, showed the mark of chisels along the sides, and in some cases a channel was cut down the slope from one corner. On each of these two sides of the temple there were a number of such cuttings, between which, however, there was no obvious connection beyond general resemblance. On each slope, also, there was a small three-sided 'shrine' cut into the hillside.<sup>5</sup> The two were not exactly alike, but were decidedly similar. In the one to the southwest were three inscriptions, one at the back and one at each side, but there is no altar cut in the rock in the space which they enclose. The one to the north, on the other hand, has two spaces at the back which have been carefully prepared for inscriptions, but it is quite clear on close examination that no inscription was ever actually carved in either. Just in front of this space prepared for inscriptions an oblong basin was cut in the rock, a small raised portion with a flat top being left in the centre with a fairly deep trench around it and a channel running downhill to another small round basin about a yard away.

It did not at first occur to us that there was any connection between the small shrines and the larger rock-cuts, which in the absence of further evidence we thought might be reservoirs for collecting and storing rain water. In the winter of 1931, however, on a short second expedition, it was possible to remove the accumulation of sand from one of the largest of these 'reservoirs' and examine it as a whole. We immediately recognized the improbability that this had ever been so used. A shallow trench ran around the sides and an even shallower one between two raised 'tables' in the centre, one of

<sup>5</sup> These are very like the shrine described by Petrie on the road from the temple, and also one cut in the side of the hill below Room J, which Petrie believes earlier than most of the temple as it is now. See plate V.

which was somewhat higher than the other. What the use of these places was is thoroughly obscure, but the initial resemblance to reservoirs entirely disappeared, and a similarity to the smaller cuts which have been called 'shrines' is obvious. Yet it is hard to conceive of them as altars, with trenches to carry off the blood of sacrifice. Perhaps the matter could be cleared up if the whole series on one slope or the other, or preferably both, were excavated, and the relation between each and the others, and between them and the shrines, were worked out. On both sites are fragments of stelae, but in all or almost all cases they have been eroded beyond all legibility, and in many cases it is impossible to fix their original position.

On the north side a clearly cut trench leads steeply down the hillside from the corner of one of the cuts to a hollow in the side of the hill.<sup>6</sup> It is more than a foot wide and equally deep, and was really the origin of our idea that these were reservoirs. Similar cuts may be seen above Mine L and in various other places.<sup>7</sup> It is again difficult to conjecture the use of these last. Apparently they were not intended to protect the mines from cave-ins caused by accumulating rain water, for they are not always directly above mines, and they are frequently found on the summit of knolls where it would have been impossible for water to collect. Yet they are carefully made and fairly long.

Finally we looked for a spring inside the cave of the temple. It was impossible to explore this satisfactorily during the expedition of 1930, since the sacred cave was nearly a foot deep with rain water during the whole of the time we were on the mountain. But in 1931 conditions were better and we examined the place thoroughly. The amount of water in the cave the previous winter had somewhat encouraged us, in spite of geological improbability, in the theory that there might be a spring, now ordinarily dry, which was more active three or four thousand years ago. An opening in the side of the cave on the floor level also looked hopeful. However, although we were unable to clear away all the accumulation and therefore may conceivably have missed some evidence, this seemed to be merely a recess parallel to the two higher up in the wall at the back of the cave,

<sup>6</sup> See plate V.

<sup>7</sup> See plate VI.

and we, like other investigators before us, found no trace of anything which might have been a sacred spring.

In this connection, therefore, more problems were raised than solved. Were Egyptians ever permanently resident on Serabit as servants of the temple? If they were, how did they provide for the necessities of life? What were the large cuttings in the rock surface of two of the slopes away from the temple? Are they contemporary with it and related to it, and are they connected in any way with the trenches near or above many of the mines? What is their relation to the small shrines which have been found on the same sites, under one room of the temple, and along the ancient road?

Another problem, of which Petrie sought the solution but which he did not have time to solve, was that of the route by which the Egyptians reached the mines and the temple. From the temple end he traced what he believed to be the old road as far as the little shrine which on his map is marked *Q* and on ours *speos*. Thus far it coincides with the path from the temple to Mines L, M, and N. He suggested that it should be sought further, "somewhere down the hill between valleys 7 and 8, or more probably on the western slope of valley 8, which falls away in easy slopes." This guess was remarkably accurate, as will be seen from a glance at the map opposite p. 100. Petrie's 'valley 8' is the Wadi Ṭlaḥa, and the ancient road went down the Roḍ el-'Air, the steep valley which falls away from the other side of the same arm of the plateau. But strangely enough it was not this suggestion of Petrie that led to our discovery of the road.

Exploring the top of the mountain we found fragments of stelae on the plateau at the point where it runs out between the Wadi Ṭlaḥa and the Roḍ el-'Air, and since there were extensive traces of occupation we tentatively named this 'the camp of the Egyptians,' for most of the inscriptions found there were Egyptian. This was in distinction from 'the camp of the Semites' near Mines L, M, and N, where most of the Sinaitic inscriptions were found.

Some days later the Arabs who were with us mentioned that there were a great many inscriptions down one of the wadis, the Roḍ el-'Air. Accordingly Father Butin spent a laborious day

climbing down in search of them. All were found to be Egyptian (pp. 100, 109 f.), and they indicated that this spot had been frequented by Egyptian expeditions. Whether this was the path to the top of the mountain during the whole of the time when expeditions were sent to Serabit, or whether it was only used at one time, remains a question which only further exploration could settle. With this in mind we examined the only other valley which seemed to us likely, the Wadi Ba'la, but with no result. In any case many of the expeditions used the Roḍ el-'Air. The inscriptions and graffiti are at least half of the way up this narrow gully from the point where it enters the Wadi Ba'la, and the gully leads nowhere but to the top of Serabit at the place which we called 'the camp of the Egyptians.' Although very rough, the path is probably not impassable for donkeys even now, and a small amount of work would make it quite practicable.<sup>8</sup>

How the Egyptians went from the bottom of the Roḍ el-'Air to the coast remains uncertain. For heavily laden animals the route down the Wadi Ba'la to the Wadi Baba and along the bed of the Wadi Baba to the coastal plain, though rather long, would have been much the easiest; and it is tempting to see in the modern name of the Wadi Ba'la a reminiscence of an ancient name, 'the valley of the goddess,' since it led directly from the foot of the mountain. The inaccuracies and variations in local pronunciation, however, and the fact that we understood from our Arabs as 'Ba'la' what Petrie heard as 'Batah,' make this suggestion more tempting than convincing.

Standing at the top of the Roḍ el-'Air, the road to the Wadi en-Naṣb and its well, now the nearest dependable water supply, is plainly observable. Crossing the Wadi Ba'la after the descent by the Roḍ el-'Air, a clearly marked path leads up to a dip in the next ridge. This is the pass into the Wadi Lihyān, and beyond, in an almost direct line, can be seen the dip in the second ridge which is the well-known pass into the Wadi en-Naṣb,<sup>9</sup> by the side of which there is an inscription of the twentieth year of Amenemhat III, although this inscription need have nothing to do with Serabit or expeditions there, since the

<sup>8</sup> See plate II.

<sup>9</sup> See plate III.

Egyptians mined in the Wadi en-Naṣb also. It is, however, probable that the route from Serabit to the well in the Wadi en-Naṣb was the one indicated above, and that then as now the Bir en-Naṣb was the chief source of water.

It thus appears that the Egyptians, coming to Serabit in the eighteenth dynasty and perhaps at other times also, climbed the mountain by a path up the side of the Roḍ el-'Air, the miners or pilgrims sometimes camping on the arm of the plateau just at the top of that gully. From here a well-defined path led across the head of the Wadi Ṭlaḥa, and then, uniting with the path from Mines L, M, and N coming in from the left, it wound on along the narrow stretch of level ground between the sharp drops which mark the heads of wadis, and so past the shrine to the other mines and to the temple.

Whether it is justifiable to call one spot 'the camp of the Egyptians' and another 'the camp of the Semites' merely because more inscriptions were discovered in one language or the other, is doubtful. It is certain that the Egyptians worked the mines where the Sinaitic inscriptions were found. Perhaps the men who wrote these inscriptions were slaves or workmen to the Egyptians; perhaps they were independent hunters for turquoise who came in the intervals between the Egyptian expeditions. Some of the offerings in the temple were inscribed with Sinaitic characters. But whatever their relation to each other in time, there is hardly a section of the plateau on the top of Serabit which has not yielded traces of the passage of both races.

## IV

## THE PROTOSINAITIC INSCRIPTIONS

ROMAIN F. BUTIN

§ 1. *Introduction*

THE present article was begun with the limited purpose of making known the new inscriptions discovered by the Harvard-Catholic University Joint Expedition to Serabit in the spring of 1930. In the course of this study, I perceived that some signs doubtful in the inscriptions already published were made clear by the new slabs, and I decided to go over the entire field again.

It is not necessary to repeat the entire bibliography as found in my former article, 'The Serabit Inscriptions,' in the Harvard Theological Review, 1928. The early contributions of Flinders Petrie,<sup>1</sup> Schaefer,<sup>2</sup> Gardiner,<sup>3</sup> Cowley,<sup>4</sup> Sethe,<sup>5</sup> Eisler,<sup>6</sup> Bruston,<sup>7</sup> Grimme,<sup>8</sup> Ullman,<sup>9</sup> Furlani,<sup>10</sup> Schaumberger,<sup>11</sup> and others, still

<sup>1</sup> Researches in Sinai, London, 1906.

<sup>2</sup> 'Die Vokallösigkeit des phönizischen Alphabets,' in Zeitschrift für Aegyptische Sprache, 1916.

<sup>3</sup> 'The Egyptian Origin of the Semitic Alphabet,' in Journal of Egyptian Archaeology, III, 1917.

<sup>4</sup> 'The Origin of the Semitic Alphabet,' in Journal of Egyptian Archaeology, III, 1917.

<sup>5</sup> 'Der Ursprung des Alphabets,' in Nachrichten, Göttingen Academy, Geschäftliche Mitteilungen, 1916, pp. 88-161; 'Die Neuentdeckte Sinai-Schrift und die Entstehung der semitischen Schrift,' *ibid.*, 1917, pp. 437-475; 'Die wissenschaftliche Bedeutung des Petrie'schen Sinaifunde,' in Zeitschrift der deutschen Morgenländischen Gesellschaft, 1926, pp. 24 ff.

<sup>6</sup> Die Kenitischen Weihinschriften der Hyksoszeit, Freiburg i. B., 1919.

<sup>7</sup> 'Les plus vieilles inscriptions Cananéennes,' in Revue Archéologique, Série V, XIV, 1921, pp. 49 ff.

<sup>8</sup> Althebräische Inschriften vom Sinai, Hannover, 1923; 'Hjatsesu und die Sinaischriftdenkmäler,' in Zeitschrift der deutschen Morgenländischen Gesellschaft, 1926, pp. 137 ff.; Die Lösung des Sinaischriftproblems: die altthamudische Schrift, Münster i. W., 1926.

<sup>9</sup> 'The Origin and Development of the Alphabet,' in American Journal of Archaeology, 1927, pp. 311 ff.

<sup>10</sup> 'Di una iscrizione palaeoebraica Sinaitica del Museo Egiziano del Cairo,' in Rivista degli Studi Orientali, 1925, pp. 593 ff.; 'Yahu, Sapdu e una presunta iscrizione di Mose,' in Giornale della Società Asiatica Italiana, New Series, I, pp. 1 ff.

<sup>11</sup> 'Die angeblichen Inschriften vom Sinai,' in Biblica, 1925, pp. 26 ff., 156 ff.

retain their value, and in many respects are still the basis on which more recent investigations rest. Since then several articles have appeared which are grouped here for the convenience of the reader. The list does not include mere reviews, although some of the latter will be utilized in the subsequent pages.

## 1928

- Alan H. Gardiner, 'The Sinai Script and the Origin of the Alphabet' (paper read before the International Orientalist Congress at Oxford, August 29, 1928), printed in *Palestine Exploration Fund Quarterly Statement*, 1929, pp. 48-55.
- Hans Jensen, 'Das Problem der Herkunft der Semitischen Schrift und die Sinaiinschriften,' in *Orientalist. Litteraturzeitung*, 1928, pp. 648-665.
- Amelja Hertz, 'Die Entstehung der Sinai Inschriften und des phönizischen Alphabets,' in *Journal of the Society of Oriental Research*, XII, pp. 131-145.
- Charles J. Jean, 'Les Hyksos sont-ils les inventeurs de l'alphabet?' in *Syria*, IX, pp. 278-299.
- Charles Bruston, *L'Inscription du Jardin de Salomon*, Montauban, 1928.
- Charles Bruston, *Nouvelles Inscriptions Sinaïtiques*, Montauban, 1928.
- Hubert Grimme, 'Die Buchstabendubletten des Sinai-Alphabets,' *Westfälische Studien*, 1928, pp. 302-312.

## 1929

- Hubert Grimme, 'Die altsinaitische Felsinschrift No. 357,' in *Le Muséon*, XLII, pp. 33-41.
- Hubert Grimme, *Die altsinaitischen Buchstabeninschriften auf Grund einer Untersuchung der Originale*, Berlin, 1929 (with table of alphabet and 28 plates).
- J. B. Schaumberger, 'De Mosaicis quae putabantur Inscriptionibus Sinaiticis,' in *Verbum Domini*, IX, 1929, pp. 90-96; 124-128; 153-155.
- Charles Bruston, 'The Serabit Inscriptions,' in *Harvard Theological Review*, 1929, pp. 175-180.
- W. F. Albright, 'A neglected Hebrew Inscription of the thirteenth century B.C.,' in *Archiv für Orientforschung*, V, pp. 150-152.
- A. E. Cowley, 'The Sinaitic Inscriptions,' in *Journal of Egyptian Archaeology*, 1929, pp. 200-218.

## 1930

- Hubert Grimme, 'Die Südsemitische Schrift, ihr Wesen und ihre Entwicklung,' in *Buch und Schrift*, IV, pp. 18-27.
- A. Mallon, S. J., 'L'Origine Égyptienne de l'Alphabet Phénicien,' in *Bulletin de l'Institut Français d'Archéologie Orientale*, XXX, pp. 131-151.
- J. Leibovitch, 'Die Petrie'schen Sinai-Schriftdenkmäler,' in *Zeitschrift der deutschen Morgenländischen Gesellschaft*, 1930, pp. 1-14 (with 17 plates).
- A. Barrois, 'Aux Mines du Sinaï,' in *Revue Biblique*, 1930, pp. 578-598 (translated above, pp. 101-129).

1931

Martin Sprengling, *The Alphabet: its Rise and Development from the Sinai Inscriptions*, Chicago, 1931 (*Oriental Institute Communications*, No. 12).  
 Joh. Lindblom, 'Die altsinaitische Inschrift, Nr. 358,' in *Le Monde Oriental*, XXV, pp. 90-101.

An explanation is necessary as to the numbers assigned in the present article to the newly discovered inscriptions. The latest found, a little slab discovered and brought back to Cairo by the Finnish mission under Professor Hjelt with the co-operation of Dr. Lindblom and Dr. Saaristo, received the number 359, in succession to the last number of those discussed in my previous article. Our first number will therefore be 360. In his *Sinaitic Inscriptions*, p. 217, Cowley, not knowing yet of the little fragment of Professor Hjelt, suggested giving the two numbers 359 and 360 to two small inscriptions of which the photographs had been furnished him by Gardiner. But it turned out that his proposed No. 360 is identical with the fragment recovered by the Finnish mission and numbered 359. Cowley's photograph gives לאבם instead of the present אבם. It would seem that since the photograph in the possession of Dr. Gardiner was taken, the initial lamed has been eroded. Cowley's proposed No. 359 seems to be the same as our No. 358 (still in Mine XIV [M]), but read upside down. Of course Cowley could not have made the identification from the defective reproduction then available. The photographs of the Finnish expedition and our own, as well as our tracings from the original, leave no doubt as to the identity of the two. Sprengling, in his *Alphabet*, pp. 44 f., had already detected this fact independently, and I feel thus doubly certain that this identification has to be made. So I start the new series with No. 360 and end it with No. 373.

After much hesitation I have decided to publish what to me seems to be a little graffito scratched — not carved — on the entrance of Mine XIII (L). It may have been an illusion of my eye, as I had not the opportunity of having anyone else examine it. I saw it, or thought I saw it, at the last minute. I took the measurements and made a tracing on the rock itself; a photograph taken of it proved to be a failure. The main reason for

giving it here is to call attention to it, so that if anyone else goes to Serabit, he can look for it and check what I have given. I give it without a number at the end of the present publication.

While at Serabit we took note of the exact location where each of the slabs was found. This will be mentioned when we speak of each individual inscription. It may be said at the outset that almost all of them were found in connection with the sleeping-shelters in what we called the 'Camp of the Semites' around Mines XII, XIII, and XIV.

As will be pointed out in due time, we took all precautions against errors in transcription; but even with the greatest care mistakes are unavoidable and we cannot pretend to have made none. However, as all the inscriptions are now accessible, except Nos. 357 and 358, which could not be detached from the walls of the mines, everyone will have an opportunity to test our readings and to correct them.

## § 2. *Date of the Inscriptions*

The date assigned to the protosinaitic inscriptions of Serabit varies between the fifteenth<sup>12</sup> and the nineteenth<sup>13</sup> century before the Christian era. In my former paper (p. 20) I gave reasons why the date proposed by Gardiner seemed to me the more acceptable. Some of the reasons then adduced must now be abandoned, more particularly those based on the interpretation of No. 357, which has to be read differently; but our general position has not been altered, it has even been strengthened by certain new evidence that has since come to light. To the reasons given in my former article I would add the following considerations.

The section of the plateau in the vicinity of Mines XIII and XIV (L and M) seems to have been occupied exclusively by the people who carved the protosinaitic slabs, for not a single Egyptian stela was found there, while further west on another ridge conditions were reversed and only Egyptian inscriptions

<sup>12</sup> W. M. Flinders Petrie, *Researches in Sinai*, 1906, p. 61; Grimme, *Die altsinaitischen Buchstabeninschriften*, p. 10.

<sup>13</sup> A. H. Gardiner, 'The Egyptian Origin of the Semitic Alphabet,' in *Journal of Egyptian Archaeology*, III, 1917, p. 14.

were to be seen. It would then seem that for some reason it was thought best to keep the Egyptians and the Semites apart, and this would point to their simultaneous presence at Serabit. This fact led us to call the one site the Camp of the Semites and the other the Camp of the Egyptians. The camp consists of several sleeping-shelters built of loose stones piled in a circle, or oval, in the centre of which a little sand had been placed to make the ground softer for sleeping. Practically all the new inscriptions come from these sleeping-shelters. There are many more such inscribed slabs, but all writing has been practically obliterated by wind, rain, and sand; we had come a few thousand years too late. There must have been some organization in the camp, since most of the inscriptions seem to refer precisely to the person who should occupy a given shelter. The only period at which we know the Semites to have been organized and to have worked side by side with the Egyptians is under the twelfth dynasty and more particularly during the reign of Amenemhat III, that is to say towards the end of the nineteenth century B.C.<sup>14</sup> This does not preclude the possibility that the Egyptian Camp was used also during the later expedition.

We find an unexpected confirmation of the date in a little fragment of pottery discovered near the high place of Gezer by Mr. Douglas James, a student at the American School of Oriental Research, during a visit made there by the School in the fall of 1929. The potsherd was described by Professor W. R. Taylor of Toronto, then annual professor at the School, in the *Journal of the Palestine Oriental Society*, 1930, pp. 16 ff.; 79 ff. I was able to examine the potsherd in Jerusalem and identified the characters as protosinaitic. The potsherd was ascribed independently by Father Vincent, Professor Garstang, Dr. C. S. Fisher, and Professor W. F. Albright to the Second Bronze Age (2000-1600 B.C.) and preferably to the earlier part of that period. Consequently, about the nineteenth or eighteenth century we have a specimen of the protosinaitic script as found at Serabit. The beth and yod are purely protosinaitic, and the

<sup>14</sup> Of course this does not refer to No. 373, which is from a different hand and seems to be later; it does not form part of the protosinaitic series.

nun, although apparently showing a later stage,<sup>15</sup> yet finds a parallel in some of our signs No. XV. This is precisely the date assigned by Gardiner and supported by the other considerations just adduced. The arguments may not be cogent, and new documents may force us to modify our position, but until they are forthcoming we think we are justified in holding to the view that the twelfth dynasty, and more specifically the reign of Amenemhat III, is still the more probable date for our Serabit inscriptions.

### § 3. *The Language of the Protosinaitic Inscriptions*

It has been generally believed that the language of the inscriptions is Semitic, some going so far as to identify it with Phoenician in an older form. This belief is antecedently natural. Serabit was a Semitic land; Petrie has shown that the ritual of the temple was Semitic and the goddess a Semitic goddess (*Researches*, pp. 186 ff.). On the early Egyptian monuments we often find the Pharaohs smiting the sheikhs of the Sinaitic clans who opposed their expeditions. The Semitic character of those people is unmistakable, and corresponds exactly to the representations of the Asiatics on the monuments of Egypt proper. With the advent of the XIIth dynasty, particularly of Amenemhat III (end of nineteenth century), conditions had changed and we find the Semites taking part in the mining expeditions. They are shown as driving donkeys, and so forth. The Retennu and the 'A'amu, also Semites, are working in harmony with the Egyptians. The leader of the Retennu is even mentioned by name: "Hebdet, the brother of the prince of the Retennu"; other good Semitic names are found on an obelisk: Yehanem, Baasha, ẖeni. Among the 'A'amu there is a certain Lua or Luy (Levi) mentioned on a monument dedicated to Hathor. Besides the Semitic Retennu of southern Palestine and the 'A'amu, probably of Syria, no other people is mentioned along with the Egyptians. Near the temple we found the carved profile of a Semite evidently con-

<sup>15</sup> Some have taken this letter to be lamed, but the stem of lamed is always outside the axis of the crook, or circle, and this is not the case here.

nected with the people that were working on the plateau. All the surrounding circumstances therefore point to a Semitic language as that of the inscriptions.

As just pointed out, at the time when our inscriptions were carved, the same script was used in southwest Palestine, where evidently a Semitic language was spoken at the time. While it is conceivable that our protosinaitic script could have been used to write a non-semitic language, yet it is far more natural to suppose that since they used the same script the authors of our inscriptions were themselves speaking a Semitic language.

The real test will of course be found in the translation of the inscriptions, and while this translation is difficult on account of the fragmentary character and bad state of preservation of the inscribed stones, I believe that enough is reliable to make it almost certain that the language is Semitic. We have established a certain number of recurring sequences which, when read in Semitic, yield a very good sense. Thus *בַּעֲלָהּ מֵאֲהָבָהּ*, 'Ba'alat,' 'beloved of Ba'alat,' 'cherished of Ba'alat,' expressions that are Semitic and give very good sense where they occur, as we shall see in the sequel. So other sequences, such as *שֶׁב* 'dwelling-place'; *תָּמָה* 'gift,' etc.; *וְזֶה אֵלֶיךָ* as demonstratives fit the context very well. All told, and in spite of many obscurities, some Semitic language seems to be the language of our inscriptions. At least, nothing better has been proposed although some are under the impression that it might be a Hamitic dialect, such as that spoken at Meroe, or Lybia. We shall welcome any other attempt that will yield better results.

To what branch of the Semitic languages do our inscriptions belong? This is not so clear. The question may have to resolve itself into the language of the Retennu and 'A'amu. Even if it is essentially Phoenician or Aramaic, it would not follow that it must be in all particulars identical with the Phoenician and Aramaic as known to us from inscriptions several centuries later. Several forms could be pointed out as especially interesting, but it may be premature, and it is better to wait until the translations have stood the test of time. Semitic languages have had their history and evolution, and at that early date the differences between the various branches were probably not so

great as they became afterwards. For the present I would simply designate the language of the Serabit inscriptions as 'Old Semitic' without further specification.

#### § 4. *The Alphabet of the Inscriptions*

##### (a) The Table of Signs.

The great source of disagreement between scholars in the decipherment of the Sinaitic inscriptions lies in the difficulty of ascertaining just what signs are found on the slabs. Special pains have been taken with this phase of the problem, but we cannot say that we have perfectly succeeded. For the old inscriptions, now in the Musée des Antiquités Égyptiennes in Cairo, namely, Nos. 346, 349-354, 356, 359, I have again examined carefully the originals. I also asked Father Barrois to make a transcription of what he saw, regardless of the interpretation; I had new photographs taken, and have worked besides on a set of plaster casts made for our use by the authorities of the Museum. Naturally I have utilized the readings of Grimme, who also had an opportunity of examining the originals, and of Leibovitch, who made it a point to reproduce what he saw after a long and painstaking analysis. Leibovitch has published an excellent monograph in the *Zeitschrift der deutschen Morgenländischen Gesellschaft*, 1930, pp. 1 ff., on precisely this point, without attempting a translation. It is gratifying to see that on most points he saw what I myself had seen or verified.

For No. 345, now in the British Museum, new photographs have been made under the supervision of Dr. Hall; special attention has also been given to the readings of Cowley, who examined No. 345 while preparing his article on the Sinaitic Inscriptions.

For Nos. 347 and 347a, now in the Musée du Cinquantenaire in Brussels, Dr. Capart had new photographs taken, and also a set of plaster casts made for us. Dr. Ryckmans had already examined the originals and published a conclusive article in *Le Muséon*, 1927, pp. 201 ff. In the late spring of 1930 I had the opportunity of examining the originals.

Nos. 357 and 358, still in Mines XIII, XIV (L and M), we examined repeatedly during our stay at Serabit; we took new photographs and made tracings from the originals.





































































For the new inscriptions Nos. 360-373 we have the tracings of Father Barrois and my own, various photographs taken during the expedition and again in Cairo, and also the set of plaster casts. For the graffito I have nothing but a hand tracing. At first I had decided not to publish it, but I have been prevailed upon to place it before the public for what it is worth.

The tracings that accompany the inscriptions were made directly from the plaster casts, corrected by the photographs and hand tracings of Father Barrois, and were prepared as accurately as possible. In the plate of signs, however, our purpose has been to reduce the signs to types for purposes of comparison, and we have been obliged to discard several small variations that were not to our purpose. The reader can easily reconstruct his own system by means of the individual inscriptions that have been accurately reproduced.

We have not attempted here to establish a comparison with the other alphabets but only to give a table of the signs as we find them, although in arranging them we have followed the order of the Phoenician alphabet. There is still room for doubt in some details; time will tell whether with the material at hand a more precise identification can be safely made. In my former article (pp. 32 f.) I gave a brief sketch of the gradual identification of the signs by various scholars, and to it I refer the reader.

I. The ox-head. This sign occurs seventeen times clearly, and six times more or less doubtfully. In one or two cases the ox-head is almost full-face (1). In others it is in profile, but with differences: sometimes the head without the ear is turned to the left (2), sometimes to the right (3); each form is found with the ear (4, 5). In No. 365 the head is completely chiselled out (6), while once (No. 359) the head is given with one nostril. In some the head is almost quadrangular; in others it resembles a rounded triangle. The horns too are treated quite arbitrarily, in some cases they are well extended. It is evident that in our inscriptions the form is not conventionalized and differs

PROTOSINAITIC SIGNS

I	       
II	        
III	     
IV	  
V	                                         

from the more rigid Egyptian ox-head with its rather sharp triangular form.<sup>16</sup>

This last fact tends to show that its form was not borrowed directly from the Egyptian sign except in a very loose way. These various forms do not seem to have any phonetic difference, for they occur promiscuously in what is evidently the same sequence, namely our Sequence No. 2.

In Semitic, the ox-head is called 'aleph; hence according to the principle of acrophony its phonetic value should be that of the first letter of the Phoenician alphabet, which as a matter of fact is called aleph.

II. The house (?). This sign in its various forms occurs about thirty times clearly and half-a-dozen times in a more or less defective manner. Leibovitch has divided those signs into four groups: the ordinary rectangle; the rectangle with a little opening at one of the lower corners; the rectangle with a kind of little canal leading out of it, like a table of offering; finally, a sign like the Egyptian sign O. 4 (court). This last sign, however, given by Leibovitch as belonging to No. 353, does not seem to be there; all that Father Barrois and I could see was the ordinary sign No. 6 with a little unintentional chipping. All these forms seem to have the same phonetic value, since they occur promiscuously in several of our sequences, Nos. 1, 2, 3, 4; even Nos. 4 and 5, which seem to be so different, occur in the same sequence in Nos. 360 and 361. This leads us to look for some object which might appear under those various forms and yet still retain the same name. These forms are after all best verified in the house, palace, court, enclosure, or anything that went under the name of a house, Semitic 'beth.' Archaeology has revealed practically every one of these forms in the various plans of houses that have come to light, some consisting of a single room, others with two or more rooms and with various minor differences, but all passing under the generic term of 'beth.'

We have first a square, and this is the most common sign (1); then the same with a dot in the middle, perhaps representing a

<sup>16</sup> I refer to the hieroglyphic signs according to the Egyptian Grammar of Gardiner, pp. 432 ff.

large jar in the middle of a house, or a cistern (2); the rectangular form (3); the next two signs (4, 5) occur in the same combination in Nos. 360 and 361. Nos. 6 and 7 show a little opening, perhaps a door, on the left and right respectively; the last three are accompanied by what Leibovitch thinks to be a canal or gutter; he even compares it to a table of offering, and in form it does resemble that object; see, for instance, the table of offering discovered at Tell Bêt Mirsim.<sup>17</sup> The object intended, however, is almost certainly the same as the one represented by the other forms, for they interchange with it in the sequences. The little handle-like appendage may just as well be an entrance into the house or enclosure.

We have therefore every reason to think that 'beth' was intended, and that the phonetic value is *b*. With forms so free and varied we are far from the Egyptian sign for house, and here again it is almost impossible to admit that our proto-sinaitic beth should be a direct reproduction of the conventionalized Egyptian sign. It is possible, of course, that various signs which in Egyptian had a different name and different phonetic value (house, castle, temple, courtyard) may all have been used promiscuously by the Semites with the generic term of beth.

III. The corner (?), axe (?), boomerang (?). This sign finds an almost perfect parallel in the gimel of Thamudic, as Grimme has pointed out. The object intended is not clear, but it is generally believed to be some sort of an angle (Egyptian O. 38), or more probably a boomerang (Egyptian T. 14, 15). In an interesting article, 'The Origin of the Gnomon, or the Gnomon in Hebrew Literature,' in *Proceedings of the American Academy for Jewish Research*, 1930-31, pp. 203-237, Solomon Ganz sees in the gimel the representation of the primitive axe (later carpenter's square): the name was *gām* (Greek gamma), but originally *gaml* (Assyrian *gamlu*). This view has much in its favor, and the boomerang may easily be evolved from the primitive axe. The sign generally consists of two lines forming either a

<sup>17</sup> See Albright in *Bulletin of the American Schools of Oriental Research*, No. 39, p. 7.

right or an obtuse angle (2, 3, 4); as would be expected, it may be written in either direction (1-4). Apparently it may be written also with one simple line (5, 6), and this is the case in Sabaeen. Phonetic value *g*.

The sign in its various forms occurs about half-a-dozen times.

IV. The door. The representation of a door is very plain in two of the new inscriptions. The door is represented with hinges and panels (1), or without the panels (2); compare Egyptian O. 31. Apparently the same letter written horizontally occurs in the little sphinx of the British Museum, but Cowley, who examined the original, is not satisfied that a door is meant.

The Semitic word for door is 'daleth,' the name given to the fourth letter of the Phoenician alphabet. There is therefore little doubt that the phonetic value of our sign is *d*. It occurs twice very clearly, and perhaps as many times doubtfully.

V. The man in the attitude of prayer. Since Sethe's article on the Sinaitic alphabet almost all scholars are agreed that this sign represents a man praying with uplifted arms, and that, since the cry that he sends up to heaven in this attitude would begin with a he הוּ, הוּ, it stands for he, or possibly for a variety of *heth* akin to he. This sign occurs a good dozen times clearly, and a few other times doubtfully. It enters into the Sequences Nos. 2 and 3; in Sequence No. 2 it corresponds to a Phoenician he, and in No. 3, possibly but not probably, to a Phoenician *heth*; see below, under Sequence No. 3.

Although the general appearance of a man in the attitude of prayer is clearly recognized, yet details vary, especially with regard to the man's body and lower limbs: the sign occurs without the head (1-3), and with the head (4-8). In some cases, the leg with knee is turned to the right (1, 2, 5, 7), in others to the left (3, 6, 8), while in still others no direction is indicated.

Cowley thought that the sign had no phonetic value but was a determinative of Ba'alat. This is disproved by the fact that Ba'alat occurs without the sign in Nos. 345, 346, 365a; and in the study of sequences we shall see that the sign really has a

phonetic function. It is akin to Egyptian A. 28, but is not yet conventionalized.

VI. The hook, or nail-head (?). The sign which in our first article we had identified as a hook in Nos. 345, 353, 357, must probably be given up. In No. 353 it is really an aleph and in No. 357 a cross. As to No. 345, the sign seems to be incomplete, and we have relegated it to a place among the defective signs. In our No. 371 there is a sign occurring next to a beth; it looks somewhat like a beth, but with the corners rounded and relatively much smaller; in this connection it could not be a beth. We have reason to think that it should be a waw, as we shall see when speaking of that inscription. Grimme has always maintained that the Sinaitic waw has really the same shape as the South Semitic; he is probably right, and we give this sign as the sixth letter of the Sinaitic alphabet. There is but one clear occurrence (No. 371), though there may be a couple of other places where its presence might be suspected, for example, in No. 349. That it does not occur oftener should not surprise us, if it is the fact that the *matres lectionis* are generally not written in these inscriptions.

VII. The double line. A sign which occurs no less than fourteen times and then almost always at the beginning of an inscription is made up of two parallel lines. The meaning of these lines is not clear. Cowley (p. 202) suggests the rabbinical *za'* which in the dual would give us the form  $\text{זא}$ , whence later *zain*. But we are not sure of the pronunciation of that letter in early times; Greek zeta would imply a Semitic *zait*. However, in spite of the obscurity of the object and of its name, virtually all scholars are agreed in attributing to the two lines the phonetic value of *z*. The connecting line between the two parallel lines does not occur in the protosinaitic inscriptions.

The variations in the sign are very slight, and purely accidental. The vertical variety which we maintained in our first article for No. 356, is really in part due to weathering, in part a continuation of the preceding sign.

VIII. The twisted thread or cord (?). This sign is tabulated as 'Shin II' by Grimme, because of a certain resemblance to one

of the Thamudic forms. The resemblance, however, is very remote; moreover, if it be given the value of a shin, no acceptable translation of the passages in which it occurs seems possible.

The form is akin to Egyptian sign V. 28, and represents some twisted thread or cord. The thread is called 'hayt' in Arabic, חוט in Hebrew, which would give us its phonetic value as *h* or *h̄*. The name, however, should be written with a teth and not with a taw; teth does not pass easily into taw, but possibly analogy with other letters ending in taw, such as beth, daleth, and teth, may have brought about the substitution of an ordinary dental for the emphatic dental. Although resembling the Egyptian sign it is not identical with it; it has only two loops instead of the three of the conventionalized Egyptian sign. It occurs four or five times; in No. 365b it is far more angular than elsewhere.

IX. The spindle (?). This sign occurs at most twice; once clearly in No. 351 and once doubtfully in No. 349. It consists of a circle with a stem crossed by a transverse bar. We have not found the sign in the new inscription. Leibovitch has placed it as a variant of our sign XII (lamed), and attributes the cross-bar either to accident or to mistake. But in sign XII the stem is never on the axis of the circle, as is the case with our present sign. Sprengling sees in it a combination of waw and taw. It seems to us that the sign is certain, and I do not think that in No. 351 there is any doubt as to its shape. Sethe in *Ursprung des Alphabets*, p. 94, n. 2, and p. 102, n. 2, suggested that teth is a modification of taw by the addition of a circle.

This sign is closely allied in shape to the Egyptian sign for n-f-r, 'good' (Gardiner, F. 35), which in Semitic would be טוב. The Phoenician name given to the ninth letter, teth, would suggest a root טוה 'to spin.' I would suggest that we may have here to deal with a spindle (Gardiner, U. 34, 35), or perhaps a distaff with a base. There were of course various kinds of spindle, as there are to-day among the European peasants. Consequently we give provisionally to this sign the value of teth, *t̄*. Since it occurs but once, and then in what is possibly a proper name, it cannot be tested by the actual meaning. Whether or not the Phoenician sign for teth, a cross within a

circle, is connected with this, we cannot say. It may be that in order to save space the stem became more and more shortened until the cross was written inside the circle, but this is a mere possibility. It may be that the Phoenicians had in view the whorl of the spindle (pixy-wheel), so often ornamented with signs some of which recall a cross or swastika, notably in Asia Minor. See Wilson, 'Swastika,' in Reports of the U. S. National Museum, 1894, pp. 765 ff.; and Lidzbarski, *Ephem.* II, pp. 128 ff.

X. The human hand. This sign is unmistakably a human hand; it seems to be found about half-a-dozen times but some occurrences are doubtful. The same sign also occurs on the Gezer potsherd. The Hebrew name would be yod, and hence its phonetic value *y*. Ethiopic 'yaman' would give the same result.

It is very evident that our sign is not conventionalized. It generally shows four fingers, or three fingers and a thumb. The Gezer potsherd has four fingers and the palm; No. 358 and the little graffito have three fingers, so also the incomplete sign in No. 365b. The Egyptian hand is entirely different.

XI. The reed (?); shrub (?). This sign apparently represents a shrub or plant. It seems to consist essentially of three shoots, sometimes but not necessarily above a line indicating the ground, or water-line. Nos. 1 and 3 resemble the Egyptian sign for papyrus emerging from water. In No. 2, one of the side-shoots is curved underneath to represent the water-line in one stroke; in Nos. 5, 6 the extended side-shoot is not curved, and the sign corresponds to the old Greek kappa. No. 6, occurring in No. 345, is, however, thought by Cowley a doubtful sign. Nos. 4, 7, 8, have no ground, or water-line, but show clearly a stem and recall the Egyptian sign for bud. Probably, however, they represent the same object as the other.

A similar sign, with three prongs but without the stem, is the kaph of the Ahiram inscriptions, while Meša has the form of No. 4 with the stem a little turned to the left. Greek, as noticed, resembles No. 5. The Phoenician kaph, as the eleventh letter of that alphabet is termed, seems to come from a root meaning

to be bent, curved, crooked, which can easily be applied to any flexible object. As a matter of fact in Lev. 23, 40 כף is used of the palm-twigs, as is the feminine כִּפָּה in Job 15, 32; compare Is. 9, 13; 19, 15. The name does not seem to have been given to the letter on account of a supposed resemblance to the palm of the hand, but must rather have been the general name of a shrub or plant with flexible twigs that would give it a curved appearance. Its phonetic value is *k*.

XII. The coil of rope (?); crook (?). The Egyptian hieroglyph that most closely resembles our sign XII is the coil of rope (Gardiner, V. 1). For this reason, we naturally think of a root ליה, 'to wind,' which is probably at the basis of the Ethiopic 'lawe,' the name given to our lamed. It is therefore possible that a coil of rope is really the object intended in our inscriptions, and that its name was akin to Ethiopic 'lawe.'

It is, however, also possible to think of an Egyptian peasant's crook, which somewhat resembles the sign, and the Semites may have used a crook different from that used in Egypt. The name of the staff, or crook, in biblical Hebrew is מלמד *malmad* (Judg. 3, 31). The Phoenician lamed probably gives another name for the same object.

Whether we have here the coil of rope, 'lawe,' or the staff, 'lamed,' the acrophonic value *l* is the same, and on this there is perfect agreement. We shall see later why we cannot admit the theory of Father Mallon, who advocates a direct reproduction from the hieratic.

This sign occurs over thirty times, and is evidently not conventionalized. Essentially it consists of a loop and of a stem outside the axis of the loop. Sometimes the stem is on the right of the loop, Nos. 1-6; sometimes to the left (7-13); the staff is turned downward with or without a curve, (1, 2, 3, 8), occasionally with a little additional tail to the left (5, 9) or to the right (7). At times the staff lies almost horizontal to the left (6, 11) or to the right (12, 13). No. 13 has the peculiarity that the loop is really a square; it occurs in No. 364 and is evidently the work of a beginner. In spite of these differences, these signs all have the same phonetic value, for they interchange in our Sequences 1, 2, 3 and in what seems to be the preposition ל.

XIII. The water. This, in the opinion of all, is the sign for water, with its ripples and waves. It resembles the same sign in Egyptian (N. 35), but the latter tends to be rigid and conventionalized, while our sign is much freer. We must note, however, that in the Sinai hieroglyphs there is more freedom as to the number of waves. Yet the sign always begins and ends with the hollow of the wave, while in our protosinaitic we have a far greater variety. The number of ridges representing waves, and the arrangement of the waves, vary greatly. Sometimes the sign begins and ends with the hollow of the wave, with three (1) or four (2) ridges; at other times it begins and ends with the crest of the wave, with two (3) or three (4) inside ripples; again it begins with the hollow and ends on the crest, or vice versa, with three or four ridges (5, 6). No. 7 belongs to this last class but accidentally the initial line has been curved.

The sign occurs at least twenty-five times, and as the Semitic name is מים 'mayim,' its phonetic value is evidently *m*.

XIV. The serpent. This sign is evidently the serpent נחש, or sea-serpent נ in South Semitic. Both would yield *n* as its phonetic value. Ethiopic has preserved nahash as the name of that letter, while Phoenician and Greek have nun (nu).

The serpent is a very common sign in the inscriptions, and occurs over thirty times. Generally speaking, the serpent is drawn in one of two directions, either facing right (1-5) or facing left (7-12). It is almost horizontal in (1), slanting in the others; the head is represented by a wider incision (1, 2, 7, 8, 9), by an oval (3, 10, 11), or by a fork (4, 5, 6, 12). The body itself is a broken line imitating the natural motion of the serpent; at other times it is a mere curve and in some cases the body is almost straight (12). The Gezer potsherd has the body perfectly straight, the head being indicated by a circle on the axis of the body.

I must again call attention to the difference that exists between our unconventionalized sign and the corresponding Egyptian hieroglyph.

XV. The fish. Cowley still insists on giving to the fish the value of daleth, because the word for fish is ד in the Northern

Semitic dialects. As we have already 'door' (daleth) for the sound of *d*, it is almost certain that the name given to the fish by the Semitic authors of the alphabet was 'samekh,' and consequently that in some respects at least their language was akin to what has been preserved in the Southern group. The Sabaean and Thamudic sign is also much closer to the Sinaitic than to the Phoenician. The Phoenician samekh does not seem to have anything in common with a fish, unless it be considered as its skeleton, which is unlikely. The Phoenician samekh is really some kind of 'support,' as the name samekh indicates in the Northern Semitic dialects.

The sign occurs four times, and each time with variations; it is quite different from the Egyptian hieroglyph sign. No. 3, which occurs in No. 358, has been listed as a different object by Leibovitch, but after examining the original in Mine XIV, all the members of the expedition agree that the sign is really a fish. In view of what has been said above, the phonetic value must be *s*.

XVI. The human eye. This is one of the signs already identified by Gardiner. When the writing is horizontal, we may have the vertical form (1, 2), otherwise the eye is horizontal. No. 3 is the usual form, while No. 4 adds the pupil, and No. 5 the eyelashes; No. 6 which occurs only in No. 348 (now lost) is incomplete but probably shows the eyebrows. In all of these the eye can be easily identified and that was all that was needed. It differs from the Egyptian sign, which always shows the pupil and without this distinctive mark represents a mouth. In our sign, however, there is no such distinction, the various forms occur in the same sequences (1, 2, 3), and more particularly in the name Ba'alat. The name is evidently 'ayin, eye, and the phonetic value the Semitic *y* (').

XVII. The mouth. In No. 358 a sign occurs in the shape of a narrow rectangle with a double line. Grimme sees the same sign in other places also where we are unable to identify it. This sign somewhat recalls the Thamudic sign for 'pe,' the mouth. We feel that here Grimme is right, and we accept the phonetic

value of *p* which he proposes. The Phoenician *pe* does not seem to have anything in common with this sign, but possibly, as in other cases, the same object has been depicted from a different angle.

XVIII. The noose, halter, or lasso (?). This sign is made up of two circles of unequal size, and sometimes possibly (but not surely) with two little horns at the base of the large circle. The form of the Thamudic 'šade' recalls the form of our sign, as does also the old North Arabic sign which looks like a ribbon put around the neck of a sacrificial bull (Lidzbarski, *Ephem.* III, p. 214). In Perrot and Chipiez (*Histoire de l'Art dans l'Antiquité: Phénicie*, pp. 795-797) from a fragment of a large metal vase from Cyprus are represented three bull-heads surrounded by an oval ring and with a smaller ring which de Asnale calls "une poignée." This is almost a perfect reproduction of our present sign. Sayce and Cowley (*Journal of Egyptian Archaeology*, III, p. 18) see in it a camel's nose-ring. It might then be a halter passed round the head or neck of the animal, with a loop, or circle, for leading it; it might be also a lasso, or noose, for catching animals and bringing them in after their capture.

The Greek *σαδη*, *ριαδη*, in lamentations, as also Ethiopic 'šaday,' or 'šadāy,' would tend to show that the final yod is really a part of the root, and consequently the name šade should not be derived from a root צוד 'to hunt,' but rather from a root צרה, older צרי, unless we see in the yod a plural or dual ending. In the Bible we have a root צרה (Ex. 21, 13; 1 Sam. 24, 11) in the sense of 'to lie in wait' or 'to entrap.' If the object in question is a noose or lasso, the name would be most appropriate.

Grimme derives this sign from the Egyptian full face and neck, and reads it as a dual form of צר 'both sides (of the face)'; but in that case it ought to be written with double daleth.

Whatever be the object represented and the name given to it, the value to be attributed to this sign is almost surely š, since in the four occurrences where it is found that yields a good sense.

XIX. The needle (?). This sign looks very much like Sign IX lacking the cross. It occurs but once. In form it is quite close to the Phoenician qoph, and old Greek koppa. In South Semitic dialects the corresponding sign is similar, but there is a line on both sides of the circle. There cannot be much doubt about its name qoph and its phonetic value as *q*, but there is much disagreement as to the object represented.

Lidzbarski suggests that we should call the letter qôba', and that the object represented is some kind of helmet, or headgear (Ephem. I, p. 133), but the form on which this opinion is based does not correspond at all to the form that the sign has in our inscription No. 351. Eisler,<sup>18</sup> after Sayce,<sup>19</sup> thinks that it is the Babylonian kuppû 'bird trap'; but it is unlikely that the sign should be of Babylonian origin.

Others connect it with Aramaic קופא 'eye of a needle'; others with Arabic quff, 'hole of a hatchet' and, occasionally, 'back of the head.' The sign occurs clearly but once.

XX. The human head. This sign occurs about a dozen times. Without a doubt we have here the human head, either in profile or full face. The profile may be turned to the left (1, 2, 3) or to the right (4, 8). The full face is either with the eyes (5) or without the eyes (6). No. 7 is of the same type as No. 6, but was evidently carved by a beginner. In Semitic the name for the human head is ראש, so that the traditional Phoenician name resh is quite accurate and its phonetic value is *r*. There again we must call attention to the absence of any conventionalized forms as compared with the Egyptian.

XXI. The mountain range. This sign is one of the most common in the protosinaitic inscriptions, occurring more than twenty times and with only slight variations. The side lines are generally a little curved inwards (1, 2), but sometimes rise straight (4). The middle ridge is generally in the shape of a curve (1, 3, 4), but in a few cases is horizontal (2). A corresponding sign is found in all the Semitic languages and old Greek. There is every reason to believe that it is the same as

<sup>18</sup> Die Kenitischen Weihinschriften, p. 102.

<sup>19</sup> Proceedings of the Society for Biblical Archaeology, 1910, p. 220.

Phoenician shin, or shen. The object intended seems to be the Egyptian sign N. 25, 'hilly country,' with ridges and valleys. The word 'shen' occurs with a similar meaning in 1 Sam. 14, 4 f.; Job 39, 28. The object we have here could hardly be a set of teeth, the usual meaning of 'shen' in Hebrew. Its phonetic value is *sh*.

XXII. The sign, or mark. This is the most common sign in the protosinaitic inscriptions. It occurs over thirty-five times. In form it is found in practically all the older Semitic and Greek alphabets. The Semitic name for 'sign,' or 'distinctive mark,' is *taw*, and there is little doubt that the phonetic value of our sign is *t*.

XXIII. (?). This sign occurs but once, in the horizontal line of No. 357. Grimme, who gave the sign correctly, thinks it is either a shin or a *heth*. In our former article we had read the sign as possible *waw*, but our No. 6 is probably *waw*, as Grimme advocated from the beginning; furthermore, we had overlooked the stem below the main body. This stem, or root, was verified by us on the original in Mine XIII. Does the sign represent a plant, or leaf, with root, or stem, somewhat like Egyptian M. 16? If so, it might be a variant of No. 11 kaph. But this is very doubtful. Sprengling sees in it a flower calix, *gabi'*, and gives it the value of *g*. Other suppositions can be made, but we have found nothing satisfactory.

XXIV. [Same as Sign No. X.] The sign occurs at the end of the left column of No. 353. In my former article I took it for mere weathering, but a closer examination of the original and of the plaster cast makes it almost certain that it is a sign. This is also the opinion of Father Barrois and of Leibovitch, both of whom saw what we now see; Eisler had already read it correctly and interpreted it as a hand. To us also it looks like a hand and it is therefore to be taken as a variant of Sign No. X.

In two inscriptions, Nos. 371, 372, along with signs which seem to be Sinaitic there occur two pictures of birds. It is our opinion that these two inscriptions are mixed Egyptian and protosinaitic, as we shall see later. These birds do not belong in the list of Sinaitic alphabetical signs.

## Defective Signs

The following signs are defective or incomplete and have to be partly reconstructed.

1. (No. 363.) Seems to be essentially the same as Sign No. VIII.

2. (No. 363.) This is probably the ox-head, Sign No. I.

3. (No. 365a.) This sign was chipped off. It would seem as if there had been originally three letters mem, shin, and resh or yod.

4. (No. 358.) This is probably the hand, Sign No. X, 4.

5. (The incomplete letter in No. 345.) Of this sign we do not feel that we can safely suggest a reconstruction. Grimme gives it the value of *heth*; it may be he, 'the man in prayer.'

6. This incomplete letter in No. 350 is probably the upper part of nun, the serpent.

In the preceding pages I have tried to assign phonetic values to the Sinaitic signs, basing my view on the object represented and following the principle of acrophony. I have also compared the signs with other Semitic alphabets, with which, since it is my conviction that the language is Semitic, a certain analogy is to be expected. The relations seem to be closest with the Southern alphabets and especially with Thamudic; this double relation has always been maintained by Grimme. In my former article I said: "The real test of all hypotheses about the values of the signs will be found in their application in the inscriptions themselves. If the value assigned to a sign yields consistently good results, in keeping with the genius of the Semitic languages and with the historical and psychological circumstances under which the inscriptions were written, there is good reason to believe that value to be correct. If on the contrary the sense obtained does violence to well-established lexicographical or grammatical rules, or seems far-fetched and fanciful, then we should be dissatisfied with the phonetic value attributed to the sign" (pp. 13 f.). To this I have nothing to add; I recognize that other values for some of the signs are possible, and shall be the first to applaud if my identification is proved faulty.

## (b) Remarks on the Sinaitic Alphabet.

It is better to leave out of consideration temporarily the possible relations that may exist between the alphabet of our inscriptions and the Phoenician alphabet as known in the thirteenth century B.C. Our Sinaitic script is evidently alphabetic; the small number of signs is a proof of it. In this there is nothing to surprise us, for since my last article two other alphabetic systems have come to light. One resembles the cuneiform characters and was found in 1926 at Ras Shamra, north of Lataqieh in Syria, by Schaeffer and Chenet;<sup>20</sup> the other, based on a hieroglyphic system (but doubtfully the Egyptian system), was found at Byblos by M. Maurice Dunand and published by him in Syria, XI, 1930, pp. 1 ff.<sup>21</sup>

In my former article, pp. 29 f., I maintained that the alphabet was an attempt at simplification for the use of those who could not easily master the intricacies of the existing cuneiform and hieroglyphic systems. This I still believe. But if it was a simplification it must have had a prototype, and this we find in the existence of an Egyptian alphabet.<sup>22</sup> Moreover, several characteristics of our script point in the same direction.

<sup>20</sup> Things have moved rapidly in the decipherment of the inscriptions of Ras Shamra. As soon as the text was made known by Virolleaud in Syria, vol. X, pp. 304-310, Hans Bauer and Father Dhorme, at first independently but later with exchange of views, began to study them and eventually furnished a system acceptable to scholars. See H. Bauer, in *Das Unterhaltungsblatt*, June 4, 1930; in *Forschungen und Fortschritte*, August 20, 1930; and especially 'Entzifferung der Keilschrifttafeln von Ras Shamra'; Dhorme, in *Revue Biblique*, October 1930 and April 1931. A résumé of the work is given by Dhorme in *Journal of the Palestine Oriental Society*, XI, pp. 1 ff. On the excavations at Ras Shamra, see Schaeffer in Syria, X, pp. 185 ff., and in *National Geographic Magazine*, October 1930, pp. 476 ff. A study of the relations of the alphabet of Ras Shamra to the Sinaitic inscriptions is contributed by A. T. Olmstead to M. Sprengling's *The Alphabet, its Rise and Development from the Sinai Inscriptions*, Chicago, 1931.

<sup>21</sup> It was the good fortune of the present writer to examine the original in the Museum of Beyrout, and to secure a good photograph from M. Dunand himself, as well as a hand tracing by Father Barrois. More recently, Father Mallon found new signs on various objects discovered at Teleilat Ghassul, but these have not yet been deciphered, and do not seem to be alphabetic; see 'Les Fouilles de l'Institut Biblique Pontifical dans la vallée du Jourdain,' in *Biblica*, 1931, pp. 257 ff.

<sup>22</sup> See our 'Serabit Inscriptions,' pp. 25 ff., where references to Sethe's contributions are given. To Gardiner and Sethe more than anyone else we owe our ideas concerning the relations of the protosinaitic script to Egypt.

The Sinaitic alphabet is evidently pictorial, representing certain objects so chosen as to have the phonetic value of the first letter of their names — the principle of acrophony. In this respect the author of such an alphabet imitated the Egyptians in the formation of their own (see my former article, p. 26).<sup>23</sup> The reading of Ba'alat, and also of the other sequences in which Ba'alat enters as a component part, is a positive counter-proof of the hypothesis in the case of at least one third of the letters. This makes it certain that the hypothesis applies to the others also, even if in some cases the object intended, and therefore the phonetic value, is somewhat doubtful. The possibility is not excluded that occasionally some determinatives were used, although they do not seem to occur in the Sinaitic inscriptions. Again — a remark which seems to apply to the alphabets of Ras Shamra and apparently of Byblos — the vowels are not written, which is in accordance with the Egyptian method, but not with the Babylonian cuneiform.

An important fact is that the Sinaitic signs are not conventionalized, as is evident from the table of signs. As long as the object intended is recognizable they were considered to have fulfilled their function. On this point they differ from the more or less rigid hieroglyphs; hence the Sinaitic signs, while they may be an imitation of the Egyptian hieroglyphs, are yet hardly a direct reproduction of them, even after allowance is made for variants in the hieroglyphs themselves. To make a satisfactory comparison we should need a systematic palaeographical treatise on the Egyptian hieroglyphs, noting the differences and variants in the signs as they occur on the monuments. So far as I know, this is still a desideratum.

There is certainly a general resemblance to the Egyptian hieroglyphs, simplified in some cases for more or less cursive use; and the resemblance is of such a nature that it would be useless to look elsewhere for a prototype of our script. Nevertheless it must be admitted that the authors of the protosinaitic system handled the forms with the greatest freedom and independence, and applied the system in their own way. This idea

<sup>23</sup> Bauer, and partly Jean, still doubt the principle of acrophony.

is expressed by Sethe when he speaks of a *Vorbild* rather than an *Urbild*.<sup>24</sup>

It is further to be noticed that also the arrangement of the inscriptions on the slab points to Egyptian methods, as Sethe has shown and as was mentioned in my former article (p. 27).

If our alphabet of Sinai is connected with Egypt, it must have been elaborated in a region where there was intercourse with Egypt. We were at first inclined to consider some section of the Sinai Peninsula as the spot where this imitation and simplification took place. But this contact existed all over the Arabian Coast, Sinai, Southern Palestine, Phoenicia, and generally through the Mediterranean islands.

From the potsherd of Gezer we learn that this same script was in use during the Second Bronze Period in Southwestern Palestine and continued to be in use down to the thirteenth century, as evidenced by the Bliss fragment of Tell el-Hesi. If we are right in assigning the protosinaitic inscriptions to the twelfth dynasty, the Semitic Retennu and the 'A'amu, working then at Serabit, may have been those who engraved our inscriptions on the stones. The Retennu are supposed to have inhabited the country south of Palestine. They may have brought the alphabet with them to Serabit, but possibly also it was used not only by them but by all the people in Sinai, Midian, and along the eastern coast of the Red Sea; perhaps also it may have been used by the 'A'amu of Syria. Grimme has called attention to the striking resemblance of the Thamudic script to the signs in our inscriptions. This would tend to show that Thamudic is derived from the Sinaitic alphabet, and that it must have covered their territory also. Very recently Sprengling, basing his view on his reading of No. 349, makes the alphabet begin at She'ir and from there spread to the north, east, and south.<sup>25</sup> This seems to me premature; the basis is very insecure, and if this view ever prevails it will be for reasons stronger than those so far adduced. Our documents do not allow us to establish the exact place of origin of the protosinaitic alphabet with any certainty.

<sup>24</sup> Neuentdeckte Sinai-Schrift, pp. 454 f.

<sup>25</sup> The Alphabet, pp. 54 ff.

In my former article I was under the impression that the Phoenician alphabet was in almost all cases traceable to the protosinaitic signs. That there are some relations seems evident from the fact that the names given to the letters by the Phoenicians and early borrowed by the Greeks find a perfect justification in most of our Serabit signs. Aleph, for instance, is far better verified in our script than in the Ahiram inscription, where an ox-head is hardly recognizable; so also with beth and most of the other signs. In fact, judging from the names, the object chosen as the basis of the acrophonic value seems to have been the same. But is that relationship one to be explained by a direct derivation or by a common origin, in view of the possibility of parallel and independent development?

We have seen that in the protosinaitic script the signs are not conventionalized, but merely adopted to identify the object intended by the name. The most striking case of this is resh, 'head,' where we have two types well differentiated, the profile and the full face, but it is found in some degree with most of the other letters. Now it is perfectly conceivable that the several forms of these unconventionalized protosinaitic signs may have given rise in the course of time to varying stereotyped forms in different localities, so that forms used promiscuously at the beginning now appear in two or more standardized forms in the North and South.

Other subsequent differences between North and South may have arisen also from the direction of the writing. As a rule, to save space, letters are written with their greatest length at right angles with the line of writing. In a vertical writing like the protosinaitic inscriptions, mem 'water' would be written in its natural horizontal position, while in the Phoenician inscriptions the sign has been tilted and made to stand on end. The same holds good for 'ayin, nun, and many others. Thus, although there are many differences between the two systems, we cannot say that the one could not be derived from the other.

Other considerations seem to work in an opposite direction, and point to some degree of independent development in both the protosinaitic and the Phoenician alphabets, starting, however, from a common ground. In the case of an alphabet based

on the principle of acrophony the *name* given to the object is essential, and in fact is more important than the form of the sign. Take *daleth*, it means a door; it is certain that both protosinaitic and Phoenician took *daleth* as the name of the object to be used; the shape of the letter in protosinaitic and the name preserved in Phoenician prove that. But there are various kinds of doors. In the Serabit inscriptions the door is represented as a square with the hinges, and so also in Thamudic, while in the Ahiiram inscription and in Greek it is a triangle without hinges, and in Sabaeen it is a triangle mounted on hinges. These are evidently different shapes for a door, according to the building to which it belongs. The door of a masonry building will be somewhat different from that of a tent, but all will be doors. The Phoenician door reminds us of a curtain door at the entrance of a tent with one corner tucked up at the opposite corner, thus giving it the appearance of a triangle. It may therefore be that even allowing for different forms in the same alphabet in its unconventionalized stage, the forms may from the very beginning have been different, although all had a door in their acrophonic system. In the same way, *beth* is a house; but the house may have one or two rooms, may show or may not show a door or entrance; and so for the other letters.

It happens that in one case, *samekh*, the name has not the same meaning in the North and in the South. In the South it means a fish, and we actually find that letter represented by a fish in our protosinaitic inscriptions; in the North it means a support, and the sign in Phoenician seems to be some kind of support, for the suggestion of a fish's skeleton is too far fetched. It would seem therefore that the name was first chosen, and that each one felt free to use the object so designated in his language to determine its phonetic value. What seems to be true of *samekh* may be true of other letters.

Apparently we have two inscriptions dating from about the same period, the thirteenth century B.C.: the Ahiiram sarcophagus and the little fragment of Tell el-Hesi published by Bliss and considered by Albright to be a link between the protosinaitic and the Phoenician. But is the latter really a link? One of the letters, '*ayin*, of the word *bela*' could be intermediary,

but the beth shows no analogy to the Phoenician beth and belongs to our Sinaitic group, while lamed is of the Phoenician type and far from our Serabit script. Were two alphabets used simultaneously by the inhabitants of the shephelah? If the date of Grant's ostrakon discovered at Beth Shemesh could be established, it would throw an interesting light on the problem. The aleph and heth are evidently of the Phoenician type.<sup>26</sup>

The question as to the direct derivation of the Phoenician from the protosinaitic alphabet is still open. If we except the little mixed fragment of Tell el-Hesi, the protosinaitic documents are older than the Phoenician by four or five centuries, and we need to have more documents belonging to that intervening period in Phoenician lands before the problem can be satisfactorily solved.

Recently Father Mallon has published an interesting study<sup>27</sup> in which he claims that the Phoenician, as it appears in the oldest inscriptions, is directly borrowed from the hieratic signs. Some cases are indeed striking, both as to form and phonetic values, and yet I cannot help thinking that these resemblances are deceptive. First of all, throughout the article the assumption is made that the form of the Phoenician letters of the thirteenth century B.C. is the original one, which I cannot believe. If Father Mallon's contention were true, there would not be any such principle as the principle of acrophony; the question would be, why did the Phoenicians give to their signs names that happen to fit exactly the form of another Semitic language, namely the protosinaitic inscriptions, and not the form of their own letters? If aleph was not meant to reproduce an ox-head, why was it called aleph? Surely the aleph of Ahiiram does not suggest the ox-head, and the natural explanation would be to say that it is the result of the gradual simplification and adaptation of an older sign in which the ox-head was clear, as is the case in the Serabit inscriptions. In the same way, if at the basis of the Phoenician beth there was, not a house, but the hieratic sign for 'crane,' why was it called beth? and how does it happen that we find a house in the protosinaitic script?

<sup>26</sup> On the Grant ostrakon see *Revue Biblique*, 1930, pp. 40 f.

<sup>27</sup> 'L'Origine Égyptienne de l'alphabet Phénicien,' in *Bulletin de l'Institut Français d'Archéologie Orientale*, XXX, pp. 131 ff.

At any rate, such a theory does not fit the protosinaitic inscriptions, which do not seem to be a mere reproduction of the hieratic signs without regard to the principle of acrophony. Grimme, who also connects our Serabit script with the hieratic, does not make the names a mere afterthought, but adheres to the principle of acrophony, even if the primitive name was different from the one found in the Phoenician alphabet. This system does not offer the same difficulties as that of Father Mallon, although we cannot accept it. As we see things now, we doubt very much whether our Serabit signs are mere reproductions of the Egyptian signs, whether hieroglyphic or hieratic; as explained above, we consider them rather as an imitation, which does not preclude originality and independence on the part of the authors of the system.

### § 5. *The Sequences*

With the help of the newly discovered fragments, which in many places are much clearer than the older ones, we have been able to establish a certain number of Sequences, or groups of letters that recur at various places. These will be of great assistance in interpreting the individual inscriptions.

(1) בעלת. Since Gardiner's discussion scholars have been agreed in finding in the four Sinaitic signs the Semitic Ba'alat, corresponding to the 'Lady' of the Egyptian inscriptions.

(2) מאהבעלת. Ba'alat is generally preceded by several letters, in two kinds of groups. The first group consists of our Signs No. XIII, I, and V. From the Egyptian inscriptions we know that one of the titles which the miners of Serabit liked to take was 'beloved of the Lady (of turquoise).' In Semitic one of the verbs that could express the idea 'beloved' is אהב, which in the intensive passive would give the form מאהב, the very form which we have here. As the last consonant of מאהב is identical with the initial beth of בעלת, it was written but once (haplography). The meaning of this group would then be 'beloved of Ba'alat.' This is all the more probable from the fact that this combination is always preceded by the proper name of a person (or by the common name of an office-holder). This sequence occurs

in Nos. 345, 350. According to Leibovitch, with whom Cowley partly agrees, this same group of letters, but with the two beths kept separate, is to be read in the last column of No. 351. After careful examination, I believe that this is so.

(3) מהבעלת or מהבעלת. Instead of our Sequence No. 2, Inscriptions No. 348, 353, 354, 356, and 361 show the same signs except for the omission of aleph. In speaking of Sign No. V, we said that the man in the attitude of prayer stood for he, as it does in Sequence No. 2, but possibly also for a variety of heth. On this latter assumption the verb here would be חבב which also means 'to love' and 'to cherish.' In the Hebrew hoph'al, or Arabic fourth passive form, we should get the above form מחב, with the two beths written but once as above, and this could be translated by 'cherished of Ba'alat.' But I am not sure that the assumption is justified. It is possible that we have to deal with the same verb as in Sequence No. 2. The vowel of the weak aleph may have passed over to the vowelless prefix mem, and aleph not have been written, so that מהבעלת would really be the same as מהבעלת. A similar phenomenon is found in בית שן, which appears as בית שן in 1 Sam. 31, 10. 12; 2 Sam. 21, 12 (cf. Tell Amarna, Bit-Sâni, 289, 20). Under this view Sign No. V would stand only for he, as this sequence is virtually the only reason for giving it also the value of heth.

In order to preserve the distinction between the two groups, we translate Sequence No. 2 by 'beloved of Ba'alat,' and Sequence No. 3 by 'cherished of Ba'alat.'

(4) בשמש (Signs II, XXI, XIV, XIII, XXI). This group occurs in Nos. 351, 353, 360, 361. It has been read בשמש by Sprengling, but the shin certainly precedes the nun. As this sequence is followed by Sequence No. 3 (No. 353), 'cherished of Ba'alat,' it must contain a proper name, and as the last two letters occur by themselves as a proper name — see the following Sequence — they may at once be separated. The initial beth is apparently the preposition ב. We have then the phrase בשן מש. The difficulty lies in the proper interpretation of שן. We must remember that there were at least two camps at Serabit el-Khadim, the 'Camp of the Egyptians,' on the plateau just above Rod el-'Air, and the 'Camp of the Semites,'

on the ridge between the two branches of the Wadi Qaṭṭar or between Mines XII and XIII. This is the locality where practically all our Sinaitic inscriptions were found. No. 360, however, which also has that sequence, was found further south, near the path and not far from Mine X. Could שן mean the 'ridge' (tooth) under the supervision of mš? It may be, but from the fact that most of our inscriptions were found in the sleeping-shelters, and that the camp was evidently a sleeping-camp, it would be more natural to suppose that in some way שן is connected with the root שן 'to dream' or 'to sleep.' This word seems to mean here the 'sleeping-quarters' or 'dormitory,' that is, the sleeping-camp. mš would of course be the officer in charge of the camp, and the sense would be 'in the camp of mš.' שן may also stand for שאן 'rest.' We have seen in the preceding sequence that בית שאן is also written שן בית. Here by appropriate vocalization it would mean 'place of rest,' or 'resting-camp.'

(5) מַש. Apart from the combination just mentioned, this word is used alone in No. 349 and No. 352. That it is the name of an historical personage is evident, for in No. 353 we read בִּשְׁן מַשׁ מִהַבְעֵלָה, Sequences 3 and 4. It is, however, noteworthy that in the two cases in which this group of two letters occurs alone, it is followed by 'ayin, and the question is whether we have two persons, mš in the preceding sequence and מַשְׁע bearing the name of the famous king of Moab of the ninth century. It seems to me more probable that we have here the same name that enters into the preceding sequence.

(6) תַּחַת. This occurs in two little statuettes now in the Musée du Cinquantaire in Brussels. There can be no doubt about the reconstruction of the second one. The two statuettes are listed as No. 347 and No. 347a. The word must mean 'gift,' as Professor Ryckmans has shown (Muséon, 1927, pp. 201-204).

(7) אַחַת. This word occurs twice at the beginning of No. 349 and of No. 357. If our Sign No. XI, 7 were read as a taw instead of kaph, which, however, is unlikely, it would also occur in No. 356. In my former article I connected the word with unutu and with Hebrew 'אֶתֶּלֶת 'ship.' From this I inferred that

it might refer to some vessel or vase altar, near which stela No. 349 was placed. This might fit No. 349, but not No. 357, which is engraved on the wall of Mine XIII. Since almost all the inscriptions are connected with the circular sleeping-shelters, which, with the surrounding dry walls, look like a concave or vessel-like object, it is possible that this word could have been used for a sleeping-shelter like those still extant at Serabit el-Khadim or Maghara; compare the various meanings of the English word 'vessel.' As to the use of it in Mine XIII it must be remembered that even to-day the chiefs are given the privilege of establishing their quarters in mines, where they are better protected against wind and sand. During our expedition Sheikh Helyan took possession of a mine, which we called the Sheikh's mine. Once אנת had been applied to a sleeping-shelter, a mine or cave could also be called אנת if it was used for such a purpose. Might not even any mine be called אנת, so that No. 349 could have been intended for a position at the entrance of a mine, to identify it as the possession of some chief?

Cowley prefers to connect the Sinaitic אנת with Egyptian pronoun IN-T; this is possible, but no more.

(8) נצבן. This occurs in No. 349 and apparently also in No. 346. We read it as רב נצבן 'head of the stelae-setters,' a *nomen opificis* from נצב. It has received other interpretations, but I see no reason for changing my opinion.

(9) נצב. Apart from the occurrences mentioned under (8), this group occurs in No. 350 and No. 351, and is evidently connected with the erection of stelae, but also with their preparation and with the inscription engraved on them.

(10) שב. These two letters follow ז in No. 360 and No. 361, and follow ש in No. 365a. In some way the word seems to be connected with the root שב (שב) 'to live at,' 'to rest at,' 'to occupy.' This meaning would fit the context admirably: 'this is occupied by,' or 'this is the sleeping-shelter of.' In view of Inscriptions No. 360, 361, and 365a, I am now inclined to read this word also at the end of the first line of No. 349.

(11) נ. This is found in No. 353 and No. 357, apparently with the meaning of 'to make comfortable,' 'to arrange,' or 'to prepare.'

Other combinations of letters will be examined when we study the individual inscriptions. There is for instance a word  $\text{עֵר}$  or  $\text{עָר}$ , the latter 'defectively' written. This occurs in No. 349 and No. 367.

### § 6. *Individual Inscriptions*

Before attempting the decipherment of the individual inscriptions, I would remind the reader of the locality where they were found. Nos. 345, 346, 347, and 369 were found in the temple; it is therefore probable that in them we should look for something connected with the worship of Hathor.

No. 348, now lost, was at Maghara.

Nos. 349–355 were found by Flinders Petrie at the entrance of Mine XIII (L). Flinders Petrie, without telling the exact spot where he found them, says (*Researches in Sinai*, p. 130):

On looking over the broken rocks about mine L my wife noticed a fragment with some signs upon it which could not be recognized. I marched further and on turning over a fallen rock I found more signs. I then brought over some men to the place and turned three or four large pieces which had fallen from a cut front of rock; thus we exposed portions of other inscriptions, which I reconstructed.

From these words it would seem that most, if not all, of this series were found at the entrance of the mine, where there are huge loose blocks. In fact it is evident that a trench was cut by the miners in front of what is now Mine XIII (L) and running from east to west. On the northern wall is an opening into the mine. Later on, possibly owing to an earthquake, part of the south wall and also of the eastern end of the north wall fell into the trench, and there among these rocks Petrie found many, if not all, of the inscribed tablets. In our former report (pp. 6, 62) Lake and Blake showed conclusively that the inscriptions were not written on the walls but on detached slabs; this is evident from the fact that Inscriptions 351 and 353 and possibly 354 were on the same block but running in opposite directions. No. 356 comes from the same place, and so does our little fragment No. 366. Probably the inscription found by the Finnish mission and numbered 359 also belongs here, but of that I am not sure.

Nos. 357 and 358 are in Mines XIII and XIV (L and M) respectively. To these could be added the little graffito over the western part of the entrance to Mine XIII, and No. 373 in the cave behind the same mine; the latter was written on a rock which our beduin detached.

All the others were found in connection with sleeping-shelters, particularly on the ridge about Mines XIII and XIV. More details will be given in connection with each inscription individually; but the fact that the inscriptions are connected with the sleeping-shelters would naturally make us expect some reference to them. I may state here that with regard to inscriptions contained within grooves in the form of a stela, I have tried to read them as one text; the fact that the text is thus encircled seems to point to the unity of contents, and the contrary assumption would require positive proof. This is true of Nos. 352 and 353.

#### No. 345

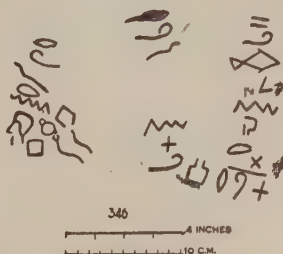
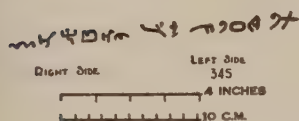
Although I now have a fine photograph made at the British Museum, I cannot add anything to what has been said. On the right side there is no doubt that we have our Sequence No. 2, and I should therefore translate 'the beloved of Ba'alat.' On the left side Dr. Cowley, who examined the original, cannot identify some of the worn-out characters. At the end there is clearly לבעלת 'to Ba'alat.' In my former article I suggested כבוד 'glory to Ba'alat,' but this is very problematic. Sprengling reads the first signs as נמר, 'devoted to Ba'alat.'

#### No. 346 (Cairo Museum, No. 38268)

Right shoulder. Barrois sees exactly what I had seen, except that by the side of the third letter he would be tempted to read a cross, taw. He may be right. The sixth letter is read alike by Grimme, Barrois, and myself, while Leibovitch and Cowley reconstruct it differently so as to form beth (II, 9). I had given the sign the value of beth, but now I am convinced that it is really resh (XX, 8); Grimme has given it its proper value. Grimme and Leibovitch see a sign to the right of the last letter of that column, but for Barrois and myself there is no letter,

only an accidental scratch. The letters are: zain, lamed, samekh, gimel, (taw), mem, resh, 'ayin, taw.

Left shoulder. Here Grimme, Leibovitch, Barrois, and I are all agreed. The line gradually swings to the right, and I am convinced that the last five letters really form part of that column and are not to be taken as a dedication to Ba'alat.



'Ayin, lamed, nun; next, a part chipped off with about three letters missing; then follow mem, taw, lamed, and, swinging to the right, beth, 'ayin, lamed, taw.

Right side of the statue. Again Barrois reads as I did, and so does Leibovitch. Barrois is not convinced that the dots which are there are really intentional. The arrangement of the last six letters is of course my own. I see no reason to change my former view that they are parallel to the same six letters occurring in No. 349, Sequence No. 8. We have then 'ayin, lamed, nun, 'ayin, mem, resh, beth, nun, sade, beth, nun.

The inscription would then read:

Right shoulder. זלסנ(ת)מרעת

Left shoulder. עלנ... מחלבעל

Side. עלנערבנצבן

It can be divided into words thus:

זלסנ(ת)מרעת עלנ... מחלבעל עלנערבנצבן

I have very little to add to what I said in my former article, pp. 44 ff. By reading resh instead of beth as the sixth letter the sense is of course changed.

(ת)לסנ ז is the demonstrative pronoun 'this'; ל preposition followed by the infinitive construct of סנ 'remove one-

self,' 'escape'; if a tav is added we should have the form corresponding to the Hebrew infinitive in ה, but to me this is very doubtful.

מִרְעָה For מִן רָעָה 'from evil,' or 'harm.'

על נ...מח It is admitted by everybody that the first two letters to be supplied on left shoulder are 'ayin and mem, thus giving us עַל נֶעַם, as at the beginning of the inscription on the side. This should be rendered by 'in favor of,' 'for the benefit of.' In consequence of the change of the above reading this would be more in keeping with the sense and also with later usage. What letter should be supplied before mem? I suggested aleph after Eisler, and read אֵמַח 'handmaid' (p. 45). I see no reason to change. Women seem to be mentioned in No. 365a.

לְבַעֲלָה 'Of Ba'alat.'

עַל נֶעַם רַב נִצְבָן The rendering which I proposed for the part of the inscription on the side of the statuette, I still believe to be correct.

I would therefore translate the inscription as follows:

'This for the protection against harm (escaping from evil); in favor of the handmaid of Ba'alat; in favor of the head of the stone-setters.'

Sprengling (p. 26) offers a different reading for the front part of the inscription; but the fourth letter can hardly be a Sinaitic lamed, nor is there room for four missing letters on the left shoulder. He reads the inscription on the side as I do.

#### No. 347 and No. 347a

Professor Ryckmans, who worked on the original in the Musée de Cinquantenaire in Brussels, has given the correct interpretation of those two little statuettes. He has shown that תַּנָּת really means 'gift.' I also examined the originals in Brussels, had new photographs taken, and worked on the plaster casts sent to us by M. Capart. There is no doubt in my mind that Professor Ryckmans is right. He is also right in supplying the missing letters in No. 347a: תַּנָּת (ת) לְבַעֲלָה.

Translation: No. 347, 'gift';

No. 347a, 'gift to Ba'alat.'

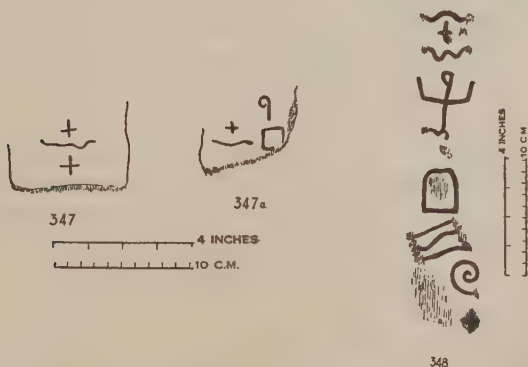
So also Sprengling.

### No. 348

This inscription, originally at Maghara, is now lost. The photograph given by Gardiner is, I believe, based on a squeeze taken by Palmer in 1868. However, there are no doubtful letters and I read: shin, taw, mem, he, beth, 'ayin, lamed, taw.

שח מהבעלת . . .

The last six letters are our Sequence No. 3, and should therefore be rendered 'cherished of Ba'alat.' This implies that the



preceding word designated a person, either a proper name or a title of office. If the inscription is complete, the name would be SH-T, cf. Gen. 4, 25; see also below, Inscription No. 352.

Translation: '(??) SH-T, cherished of Ba'alat.'

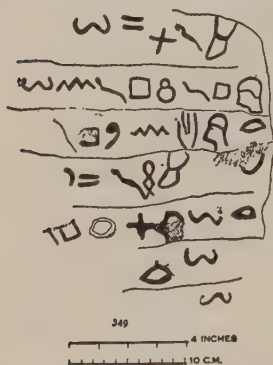
### No. 349 (Cairo Museum, No. 52511)

Naturally I was especially desirous that Barrois should examine this inscription in view of the disagreement among scholars concerning it.

First line. Barrois and Leibovitch read exactly as I do; although they expressed no views on the value of the signs. Aleph, nun, taw, zain, shin; a missing letter at the end of the line.

Second line. Again Barrois and Leibovitch see what I see, although Barrois reads only the first half of the last letter. The line is complete: resh, beth, nun, şade, beth, nun, mem, shin.

Third line. The first five letters are seen by Barrois, Leibovitch, and myself. The sixth letter is a zain according to Barrois, but Leibovitch and I see a beth: 'ayin, resh, yod, mem,



lamed, beth; two or three letters missing at the end; it would seem as if the two slanting lines might be two nuns, but this is decidedly doubtful (see, however, No. 352).

Fourth line. On this line Barrois and Leibovitch are fairly well in agreement, except that Leibovitch sees a shin to the right and partly above the aleph. After examining the original, the plaster cast, and the new photograph, I find no trace of that shin; what

Leibovitch reconstructs as the left half of the shin is merely the horns of the ox. So we have: two or three missing letters, the first of which might be a waw, then aleph, ḥeth, nun, zain; at the end of the line at least one missing letter which cannot be safely identified.

Fifth line. In this line Barrois sees nothing with certainty, but Leibovitch reads 'ayin, shin, ṭeth, a doubtful letter (which recalls the form given by Grimme to waw and also found in No. 371), then the lower half of two letters, the first of which is almost certainly beth and the latter probably nun. I see exactly the same, but instead of reading ṭeth as the third letter, the conviction has grown on me that there are two letters, the last one being taw and the first one probably a resh partly defaced by erosion.

Sixth line. A missing letter, the few strokes of which led me to call it a mem in my former paper; then shin and possibly 'ayin (or, equally well, aleph). Barrois sees only the shin, while Leibovitch adds taw after the 'ayin.

Seventh line. All I see in this line is shin preceded by a missing letter, with possibly a lamed towards the end of the line.

According to Grimme, Barrois, and Leibovitch, there is no such vertical division at the lower part of the inscription as I had thought to exist.

Transcription: Line 1 .אנחזש  
 Line 2 רבנצבנמש  
 Line 3 ערימלב..  
 Line 4 ו...אתמ.  
 Line 5 עשרתובנ  
 Line 6 ...שא(ע).  
 Line 7 ש....ל.

Possible word-division:

אנת ז ש. רב נצבן מש ערי מלב .. ו... אח מ. עשרת ובן. שא..... ש....ל.

אנת This is our Sequence No. 7 (above p. 161); provisionally we can understand it as 'sleeping-shelter,' which may be applied to a mine as in No. 357.

ז Demonstrative or relative.

ש. In my former article I supplied a tav in accordance with No. 352; but now, owing to the recurrence of שב (our Sequence 10) in Nos. 360, 361, and 365a, I am inclined here also to read שב, instead of שח. The meaning would then be that M-SH occupies this A-N-T as a resting-place, which would be in keeping with most of the other inscriptions, so far as they can be made out.

רב נצבן Head of the stone-setters, Sequence 8.

מש Apparently a proper name, Sequence 5; cf. Sequence 4.

ערי In my former article, I had supposed a prayer to Ba'alat to begin at this place, but we find such a prayer nowhere in the inscriptions. In No. 368, a similar word seems to be a patronymic, although written defectively. Similar words occur as proper names in the Bible: ע'ר, Gen. 46, 16, a son of Gad; and as a patronymic in Num. 26, 16; ע'ר or ע'יר is a Benjamite, 1 Chron. 7, 7. 12; ע'ר son of Judah is mentioned in Gen. 38, 3. So here also we might read 'M-SH the '-R-I (te).' Of course I do not suppose any identity between the Sinaitic and the biblical 'Eri or 'Iri.

מלב.. The mem I take to be the preposition מן, and the following word the name of a locality beginning with lamed,

beth. We know of לבן, Deut. 1, 1; and of לבנה, Num. 23, 20, and also of the לבן of Syria. See further under No. 352.

אח. . . If the first letter of the fourth line is really waw, it is very likely that it was followed by a proper name. אח might be in apposition with it, but more probably forms part of that name, which without it would have only two letters. Thus we should read here either 'brother of' or a proper name . . . ח.

נ. In my former paper I suggested adding a resh at the end of the line and reading נור, prince. I do not see anything better.

עשרה May be connected with the Arabic 'asirātun, 'tribe' or 'clan'; here possibly 'his tribe.'

ובן Possibly 'and his son,' but possibly also a proper name or the first element of a proper name, 2 Sam. 23, 36, etc.

The rest is too incomplete to supply any basis for a translation. In fact the translation that I give is not free from many dubious elements and I am the first to realize that it is merely an attempt to make the best of a bad case.

Translation: 'This A-N-T (mine or sleeping-shelter) is occupied by the head stone-setter, M-SH. an 'E-R-I (te) from L-B-N(?) . and by . . A-H (by . . the brother of) the prince of his tribe, and by B-N (his son) . . . . .'

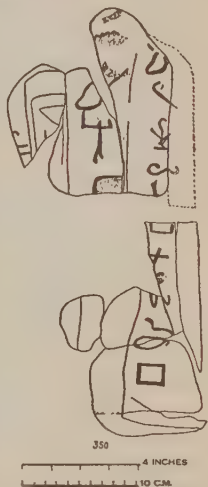
Others reading the signs differently propose a different translation.

#### No. 350 (Cairo Museum, No. 52517)

The upper and lower fragments of this inscription have been mounted too far apart, to judge from Gardiner's publication and from the examination I made of it in 1927. Moreover, a small fragment to the right of the top fragment has been lost and we must go back to the old photographs of Gardiner for the proper reading. Owing to this lacuna, Barrois had great difficulty in identifying some of the signs of the top fragment. The inscription consisted of two columns, but only a few letters are left in the top fragment.

## First Column

Top fragment. Aleph, lamed, kaph, shin are clear. The next sign is incomplete, and only a vertical line, slanting and curving slightly to the right, is left. This can belong only to a limited number of signs. Grimme reads it as he. This is possible but not likely; there is enough room to the right for the middle upright stroke of the he to appear, but there is no trace of it, nor was there any vertical line for the right arm in the fragment now missing. This makes the presence of he very doubtful. The same can be said of the aleph, of which the incomplete sign would form the left horn. No trace of the right horn is left anywhere. The fact that the line certainly curves, as Cowley and Grimme noticed, might indicate either a gimel (III, 6) or a nun (XIV, 9); in my former paper I suggested gimel, but I should now favor nun, the widening of the line at the top seeming to indicate the head of the serpent; taw is impossible, as it would throw the letter too much to the left of the column.



Middle fragment. Beth and taw are certain; then follows part of a letter near the left edge, with only its right half preserved. On the cast this looks like the right half of 'ayin, but it is hard to tell, for even what is left has been interfered with by erosion. Grimme reads mem. Then, a little lower, the right part of a shin, of which the left part is on the bottom fragment.

Bottom fragment. The letter given by me as doubtful does not seem to be so in reality: it is shin, with the right half on the other side of the crack in the middle fragment; so also Leibovitch. Then follow nun, šade, beth. Grimme sees he after beth, but Barrois, Leibovitch, and I can see no trace of it.

## Second Column

Top fragment. Apparently some small letter like zain or pe; then traces of mem, and then aleph, he, and beth. Then comes a missing fragment, and nothing is found in the bottom fragment corresponding to it.

(The third column shows ornaments, and at the bottom a beth on a fragment now lost.)

The inscription consists of the following letters:

First column אלךשנבת. שנצב

Second column ... ומאהב.

Possible word-division:

אלך שן בת. ש נצב ז מאהב. . .

אלך Seems to be the demonstrative 'those,' as in Aramaic and Southern Semitic.

שן Sleeping- (or resting-) quarters, as in our Sequence No. 4.

בת House, here probably to be read 'his household' or 'gang under his command.'

ש. Apparently proper name, subject of the following verb. The first letter is indeterminable.

נצב Verb 'he set up,' Sequence No. 9.

ז 'This one,' or perhaps relative 'who.'

... מאהב. This is our Sequence No. 2, 'beloved of Ba'alat.'

Translation: 'These, as sleeping-quarters for his gang -SH set up; he is beloved of Ba'alat.'

## No. 351 (Cairo Museum, No. 52514)

Barrois read the first column exactly as I had done, and so also did Leibovitch; but the former was of opinion that there was certainly a letter between the third and fourth signs. Cowley also (p. 209) maintains that there was another sign and that the traces of the letter point to shin. I have examined the slab again, and there is no doubt in my mind that Cowley is right. Grimme had read yod.

We have then: zain, taw, beth, shin, nun, mem, shin, nun, sade, beth, qoph, teth.

The second column begins with a sign that has been eroded and cannot be read, but is a small compact letter, possibly zain. This is followed by mem, and that by an aleph the horns of which are clearly visible. Leibovitch has further succeeded in deciphering the following letters: he, beth, beth, 'ayin, lamed, taw. The last four letters I had already read in my former study. Cowley had also read aleph and he after mem, but had



351

4 INCHES  
10 CM.

352

4 INCHES  
10 CM.

read the end of the line differently. Here again, after verifying Leibovitch's rendering, I am fairly sure of the correctness of his suggestions.

First column זחבשנמשנצב קט

Second column מאהבבעלת

Possible word-division: זח בשן מש נצב קט. מאהב בעלת

זח Is evidently the demonstrative feminine, 'this.'

בשן מש Is our Sequence No. 4, and, as explained above (p. 160), probably to be rendered 'in the camp of M-SH.'

נצב 'Set up,' as above, Sequence No. 9.

קט Apparently a proper name, subject of נצב.

מאהב בעלת This is our Sequence No. 2, without the contraction of the two beths, and therefore means 'beloved of Ba'alat.'

Translation: "qt., beloved of Ba'alat, set this up in the camp of M-SH."

We do not have to determine why the occupant ornamented the stela with a representation of Ptaḥ; he had his reasons. The religious aspect of daily life had not been divorced from purely material requirements. Outside the temple proper, religious themes are found constantly on the Egyptian monuments of Serabit.

No. 352 (Cairo Museum, No. 52510)

As will be remembered, the camel bringing this inscription from Serabit fell, and the stone was somewhat injured; happily no sign was destroyed. The slab originally consisted of four columns. Now it is made up of two main fragments, but still attached towards the right of the slab. Grimme sees two different inscriptions, one on the top fragment reading from right to left and the other on the bottom fragment reading vertically. This seems to me inadmissible, for evidently the groove that encircles the writing in the shape of a stela points to one inscription. The slab thus prepared was inscribed before it was broken, and therefore formed a unit.

Barrois sees exactly what I had seen in this inscription, except that in the fourth column, where I had read a lamed, he reads a ḥeth, as does Cowley (p. 211); after examining the sign closely I now believe that it is really the lower part of ḥeth.

First column. In the upper half: aleph, followed by a small horizontal incision without special shape, which does not seem to be a letter. Grimme, however, reads it as nun. I have already suggested that possibly when the engraver was cutting the second sign the stone chipped and he rewrote it below. Then follows shin. In the lower half: beth, nun, kaph, resh, samekh, kaph, nun.

Second column. In the upper half: mem, followed by the same kind of an accidental incision, then shin and 'ayin. The 'ayin is written a little to the right of the axis of the column to avoid a bad spot already on the stone when it was inscribed. There must have been one letter between the upper and lower half of this column. Grimme claims that the original photograph of Petrie showed a beth, but this I have not been able to verify. Gardiner does not give it, and Cowley, who had access

to these photographs, makes no mention of it. In the lower half: what seems to me a lamed, then shin, taw, lamed, beth, nun, nun. Instead of the first of the two nuns, Leibovitch sees a different sign, but after carefully examining the original, the cast, etc., I believe that part of what he sees is due to erosion and that really nun is intended.

Third column. Mem, followed by two doubtful letters. Leibovitch is inclined to read here 'ayin and beth; for me the second letter would be either a dalet horizontal or a he; there must be three letters in the break, and then, in the lower half, beth, 'ayin, lamed, taw. The stem of the lamed has been prolonged beyond the loop by either a false stroke of the chisel or more probably by ordinary weathering, giving it the appearance of a loop on a straight line. Grimme takes it as dalet; Cowley rightly reads lamed; the word is evidently Ba'alat.

Fourth column. Probably two missing letters and then what looks like beth. About five letters missing, and then in the lower half, het, taw.

First column אשבונוכס

Second column משע. לשחלבנו

Third column מ. בעלת. . . . .

Fourth column ח. . . . . ב. . . . .

Possible word-division:

אש בן כר סכן מש ע. לשח לבנו (לבן נ)ם. . . . . בעלת . . . . . ב. . . . . חח

I have nothing to change from my former article, in the rendering of the first column, although of course different word-division would give different results. Cowley divides as I do, but giving a different value to the fish he has to assume that his רכן is a title. He calls attention to the fact that the proper name כר bears the same relation to biblical כרן (Gen. 36, 26) as יתר to יתרן (1 Chron., 7, 37. 38).

First column.

אש	'that which.'
בן	'built.'
כר	K-R, proper name.

סֶכֶן 'steward,' cf. Is. 22, 15, Ahiram inscriptions, and the glosses of the Tell el-Amarna tablets. The סֶכֶן is not a servant, but an officer in the service of M-SH.

Second column.

מֶשׁ M-SH, proper name, as often here.

. עִי I should be inclined to read here also עִרִי (עִרִי) 'the 'Erite' as in No. 349 and also in No. 367. But of course this is problematic.

לֶשֶׁה I suggest considering שֶׁה as a proper name and reading 'for SH-T,' as in No. 348.

לִבְנִי Possibly a gentilic, 'the L-b-n-n-i (te).' It would correspond with the מִלְכֵן of No. 349. This might refer to Lebanon, but more probably to some locality further south, see under No. 349.

All the rest is lost. Only Ba'alat of the third column is sure, and may or may not have been preceded by the other letters of Sequence 2 or 3. We would simply call attention to the fact that the last two letters of the fourth column, ḥeth and taw, occur in No. 353.

Translation: 'This is what K-R steward of M-SH the 'Erite (?) built for SH-T the L-b-n-n-ite.....'

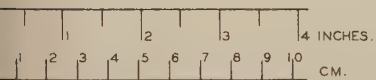
Other renderings are of course possible.

#### No. 353 (Cairo Museum, No. 52515)

In spite of the fact that this stela has been defaced by chiseling, much successful reading has been done on it since I published my first article. It consists of three columns.

Right column. I have little to change in my former readings, most of which have been substantiated by Barrois, Cowley, and Leibovitch. The first three letters are zain, taw, beth; the next two are not seen by Barrois or Leibovitch, but I feel sure that my reading of shin is correct, so also Cowley. I feel also tolerably certain that the next letter is nun (not mem, as Cowley had read); the rest is clear: mem, shin, mem (not nun, as Grimme and I had read), he, beth, 'ayin, lamed, taw.

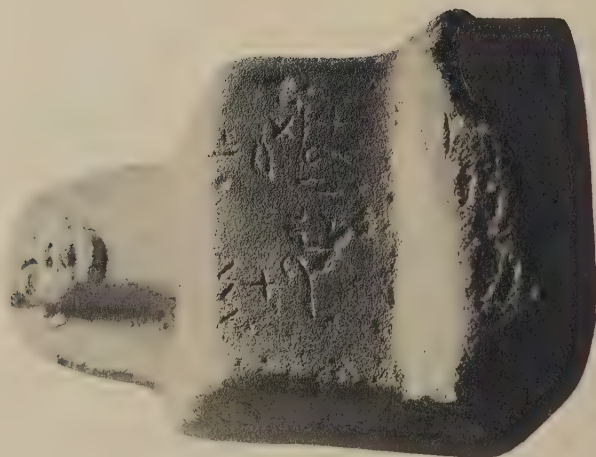
Middle column. At the top is a little scratch, taken as intentional by Grimme and Leibovitch, but which does not seem either to Barrois or to me to be a letter. At best, if a letter is



No. 345

PLATE X

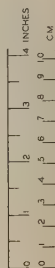
PLATE XI



No. 346 — front

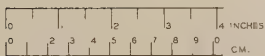


No. 346 — top

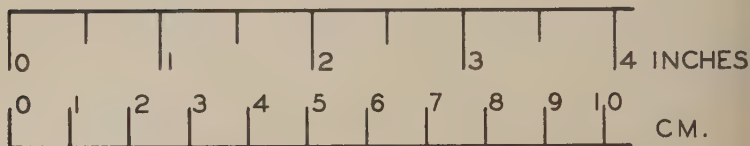


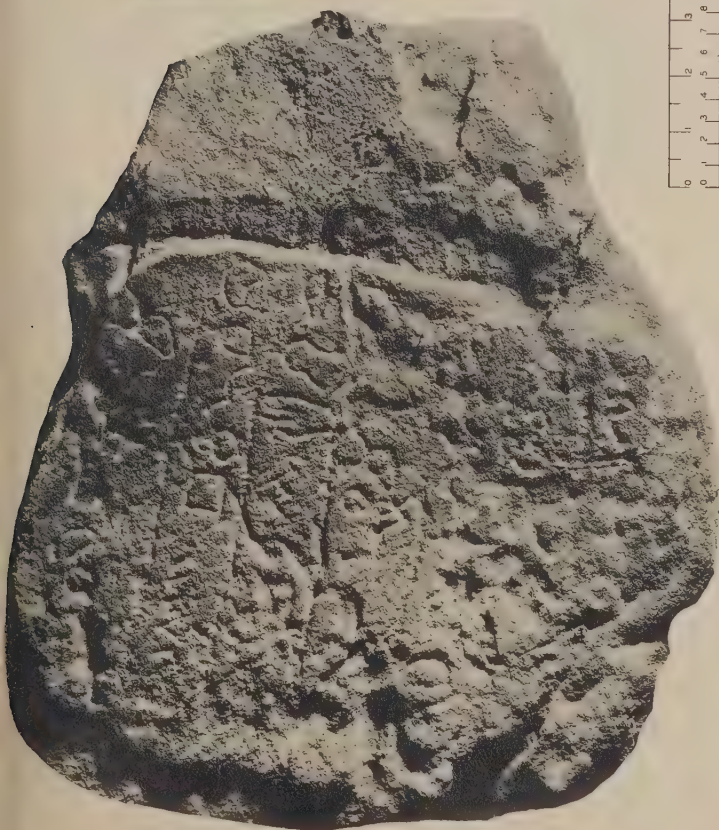


No. 362

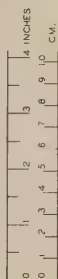


No. 346 — side

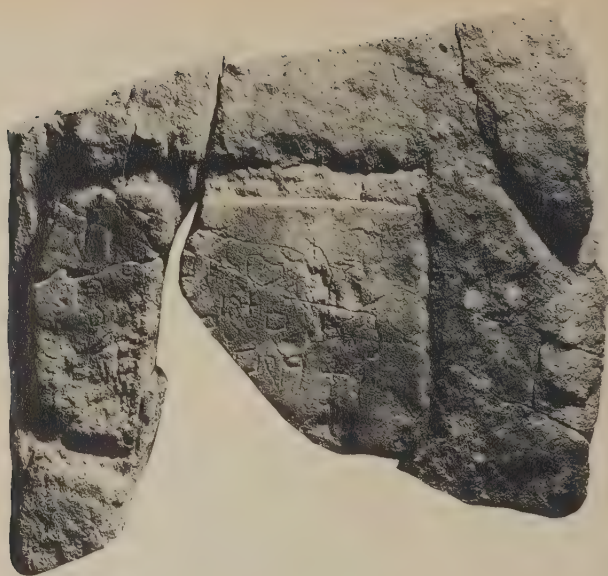




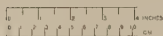
No. 349



No. 350

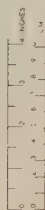
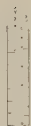
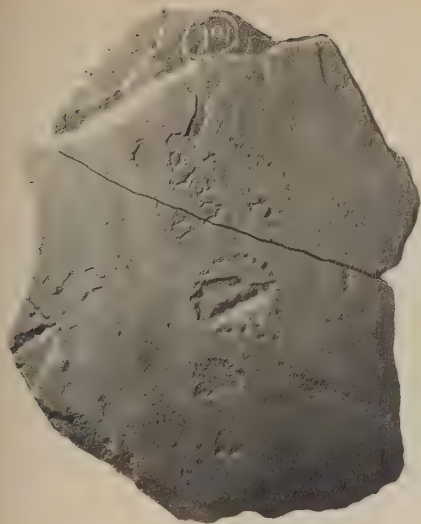


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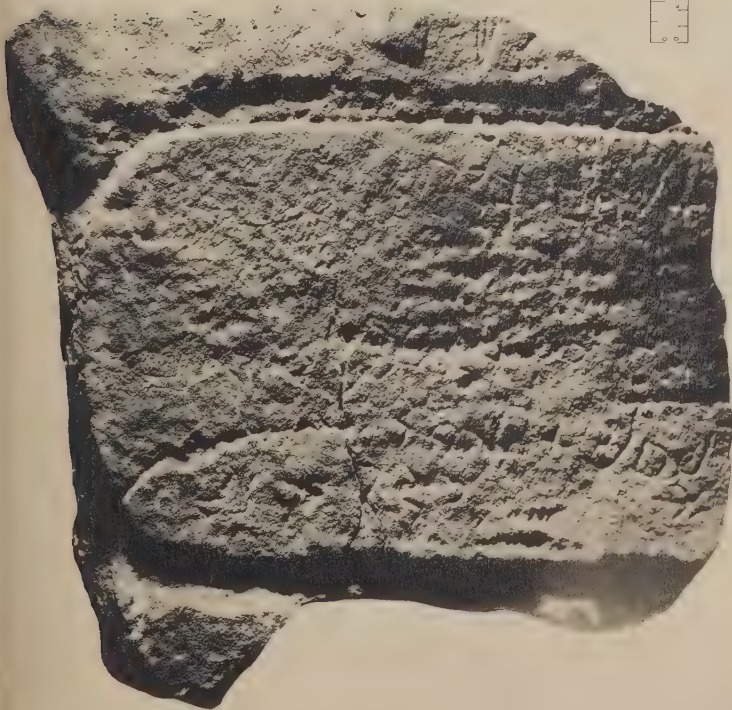


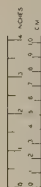
No. 351

No. 373

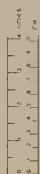


No. 353





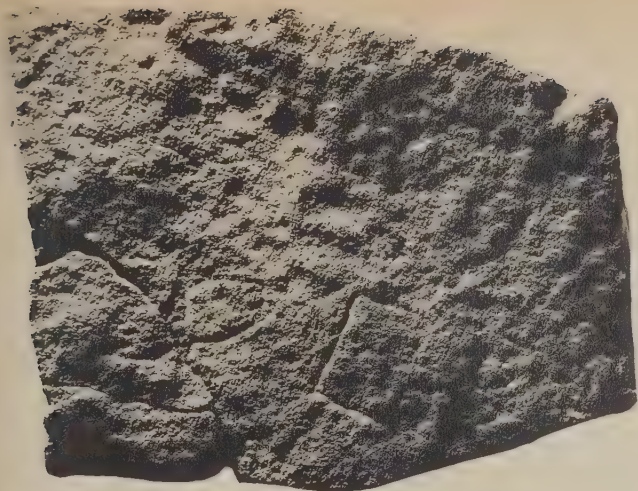
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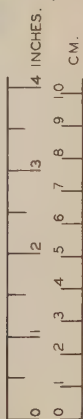
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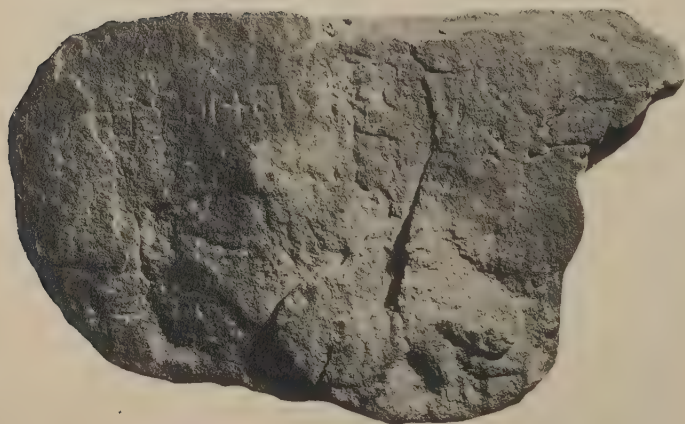


No. 356

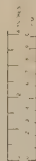
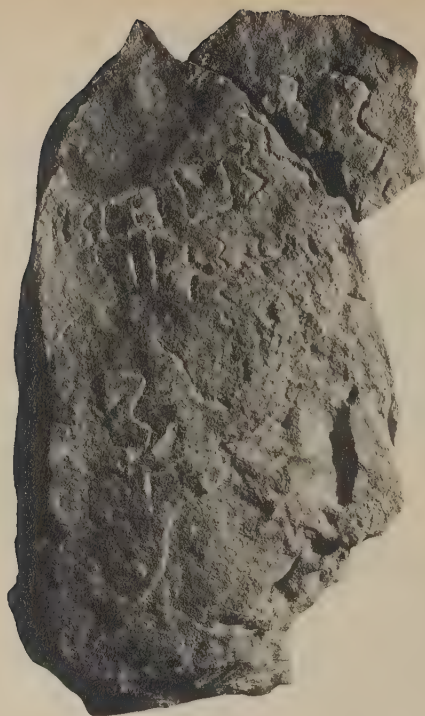


No. 359

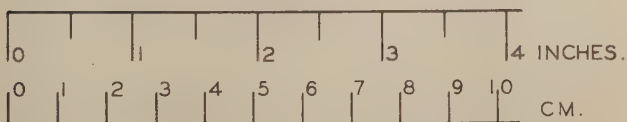
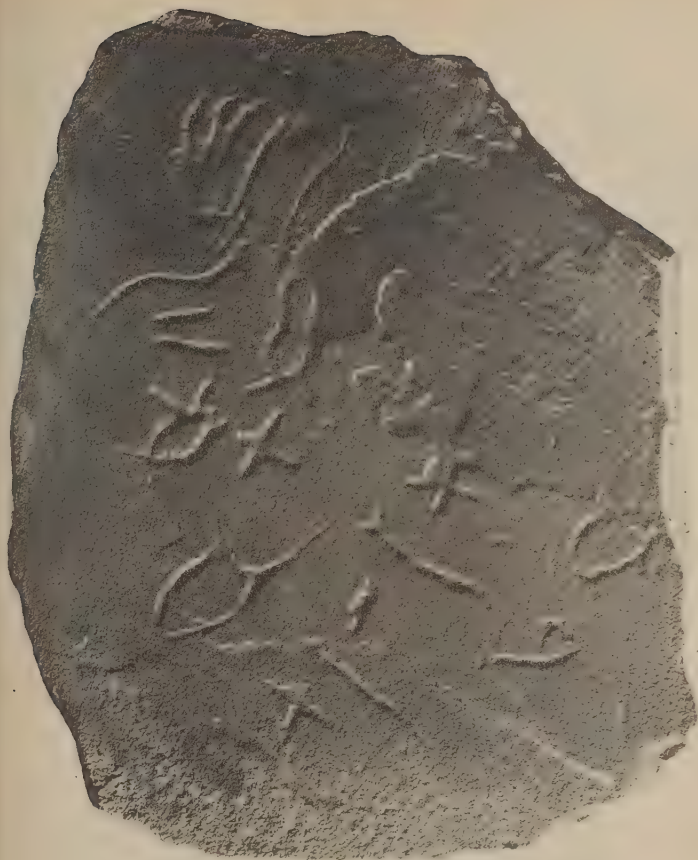




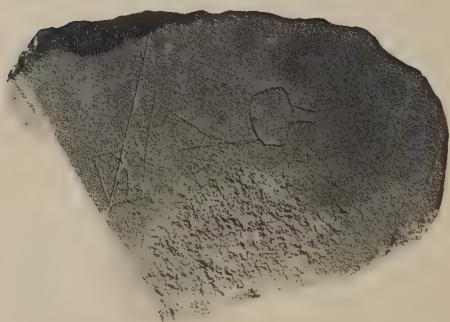
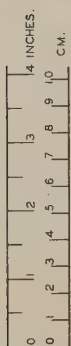
No. 360



No. 361



No. 363

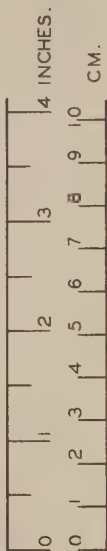


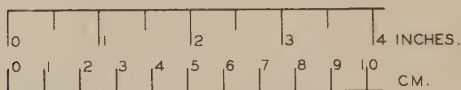


No. 365a



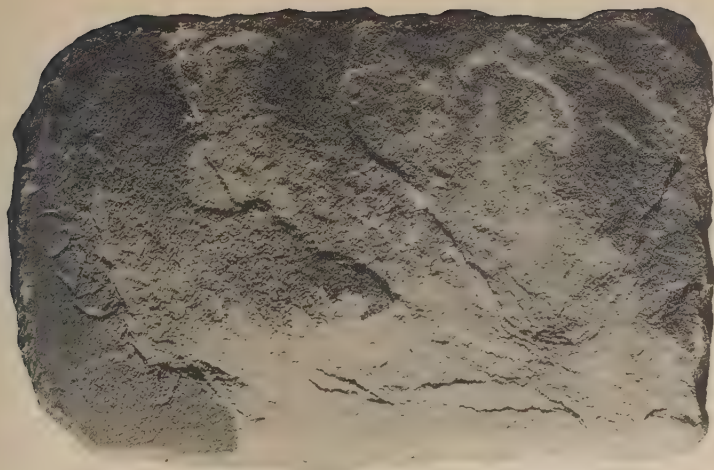
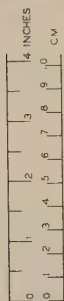
No. 365b



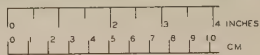




Fragment near Mine II

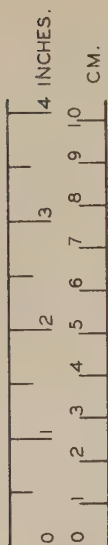


No. 368

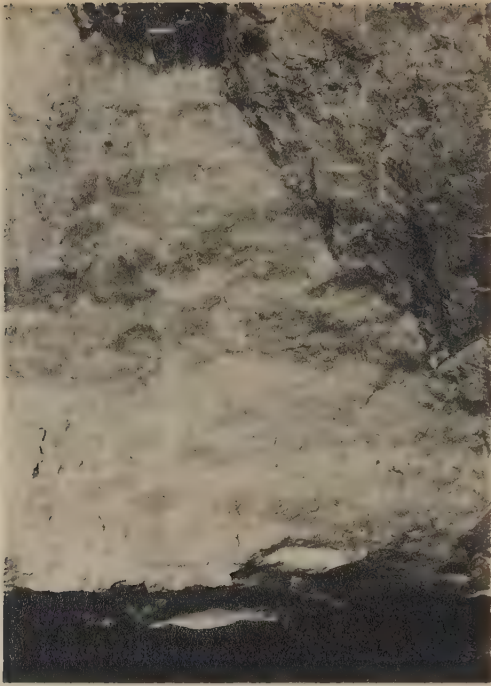




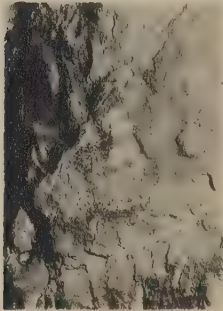
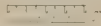
No. 372a



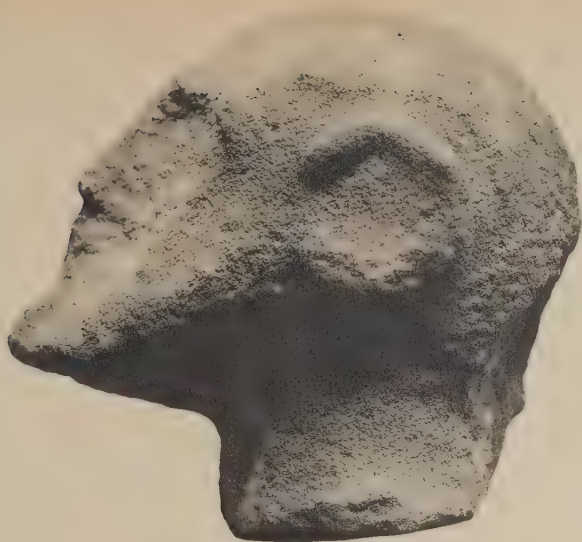
No. 372b



No. 357 (inscription in Mine L)



No. 358 (inscription in Mine M)



Semitic head in sandstone

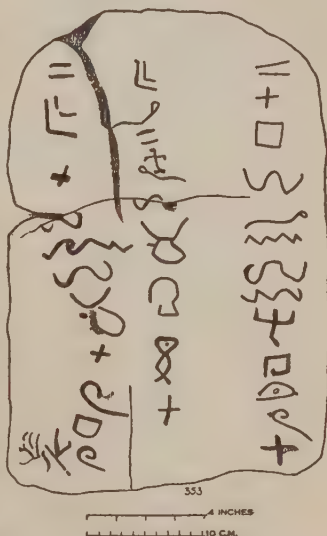


Gezer potsherd



intended, it could be only a mem. The first two letters of that column are gimel and nun. Then Barrois and Cowley read zain, and to this I agree. The following sign is doubtful. Leibovitch, and after him Sprengling, see a sign not found elsewhere, resembling a trefoil. After long examination of the original, cast, and photographs, I am inclined to see a kaph of type XI, 8, as in No. 358. It seems to be followed by nun. Then comes what seems to be shin, followed by aleph, resh, heth, and taw.

Left column. Zain, gimel, and a doubtful taw. The following letter has a curve on the right. The rest of the letter is on the break; the curve would suggest a shin, or possibly qoph; it could hardly be teth because the cross-bar would appear above and below the break. In favor of shin is the fact that there seem to be traces of the left curve of that letter. Below the weathering is a badly formed mem. That there is a mem to the right seems



certain, but it extends so far to the right that it almost invades the second column and is out of alignment with the rest of the letters. Grimme has read a lamed to the left of mem. In this he may be right. If so, the mem would have been forgotten and added afterwards in the only space available, to the right of lamed. We should then probably have to read mem and lamed followed by shin and aleph. This last letter I had read as waw, my mistake being due to the fact that I had seen only the horns of the aleph, which I mistook for a waw. I have already noted that there is no such waw in the proto-sinaitic alphabet. Then come taw, lamed, probably beth (in spite of the fact that the lower half is somewhat rounded), then lamed, followed to the left by what seems to be kaph (XI, 5); to the left of kaph is a letter that I cannot determine but which

seems to have the general appearance of a hand, so that I would suggest yod. Between the kaph and this yod, but on a level a little lower, is a line which can hardly be anything else but a nun.

The whole inscription reads as follows:

Right column זחבשנמשמהבעלת

Middle column גמכנשארחת

Left column זנחשמלשאחלב לכני (לכני)

Possible word-division:

זח בשן מש מהבעלת גן זך נש (א) ארחת ז גת שם לשאת לב לכני (לכני)

I feel little doubt about the right column, which is made up of two of our sequences preceded by the demonstrative.

זח This, feminine.

בשן מש Sequence No. 4: 'in the camp of m-sh.'

מהבעלת Sequence No. 3: 'cherished of Ba'alat.'

גן This might be the verb גן in the older sense of 'adorn,' 'make comfortable'; here in the sense of 'make ready,' 'prepare,' see No. 357.

זך Possibly proper name, z-k, subject of גן.

ארחת (א) נש I suspect here the contraction of two alephs, in the same way that we have the contraction of two beths in Sequences 2 and 3. נשא is probably a title or the office of z-k. I would suggest נשיא 'chief,' here a guide to bring the workmen up to the plateau.

ארחת I would suggest reading this word in the plural and rendering by 'caravans' or 'gangs' of miners going up to Serabit. There is no doubt, I believe, that the path chosen to ascend to the mines was through Wadi Ba'ala and up Rod el-Air; the path may have been better than today, as Barrois points out, but even then a guide would be very welcome as he is today indispensable; in the upper part cairns are still to be seen pointing the way to be followed. Of course our rendering is no more than a suggestion, but it does no violence to the signs, and has a certain local coloring which makes it at least reasonable.

The third column is still harder to interpret.

ז Demonstrative, or perhaps relative, pronoun.

גת Proper name, g-t, or gentilic 'the Githite.'

שם Verb from שים 'to place' or 'appoint.'  
 לשאת לב Inf. constr. of נשא 'for the raising' or 'uplifting,' followed by a genitive לב, 'heart' or 'courage.'

(לכני) לכין To judge from the arrangement of the signs on the slab, the more natural way of reading the letters is לכין, since the nun is lower. The only way that I see of making sense is to suppose that an aleph has been dropped in spelling, and that we should read לאכין from a root לאך 'to send,' in the passive 'to be sent,' 'to do service' (so Ethiopic), a sense that is preserved in the Hebrew מלאכה. The dropping of aleph is common enough, and we have probable cases of it in Sequences No. 3 and 4. The passive participle לאכין could be rendered 'by those doing service in the mines,' or more simply 'the workmen.'

There is, moreover, the possibility that the engraver used a technical Egyptian name which he transliterated into Semitic and to which he might have given a Semitic plural ending. Flinders Petrie (*Researches*, p. 116) mentions among the mining officials a head miner, kay, the plural of which would be kayu in Egyptian but כין kayin in Semitic. If this is accepted we should have to render the term by 'chief miners.' Probably the individual in question had to see that the head miners should keep up the work of their men.

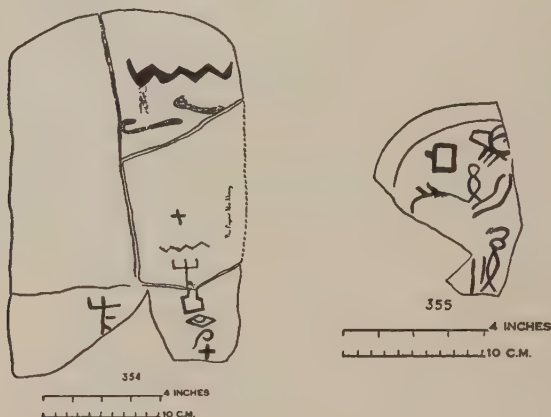
But this is not the only possibility, for we may read לכני. ל would be the preposition followed by a noun, probably a gentilic, כנני. Eisler in his "Die Kenitischen Weihinschriften," pp. 80 ff., sees in it a reference to the Qenites, קני. We know that a certain 'A'amu working at Serabit under Amenemhat III was called Qeni (see Flinders Petrie, *Researches*, plate 121). To me this is very doubtful. Could we think of כן (cf. a town in Syria) as the probable country of the 'A'amu who were working at Serabit? I do not much like this, but it also is a possibility. I do not see any foundation for reading ענגדי Engedi, as Sprengling suggests. It is a case in which it is much easier to know what the word is not than what it is.

Translation: 'This (sleeping-shelter) in the camp of M-SH, cherished of Ba'alat, (was) prepared (by) Z-K, the head of the caravans (gangs), whom G-T commissioned to keep up the spirits of the workers (or head miners, or perhaps the Kunites).

Whatever be the details of this inscription, it is certain that the object designated was in the camp of M-SH, and hence must have been of the same general nature as in the other inscriptions.

No. 354 (Cairo Museum, No. 52512)

Since the days of Flinders Petrie's and Gardiner's visits a large fragment to the right has been detached and lost. Originally, it would seem, the inscription contained two columns.



The right column begins with a mem; what followed is not known; then on Gardiner's photograph toward the middle of the missing fragment a taw, followed by what I took for nun but what is really mem; then he. In the bottom fragment, still in our possession, the four usual letters, beth, 'ayin, lamed, taw.

מ . . . . ת מהבעלת

It will be seen that this is exactly parallel to No. 348 from taw on; and I would translate: ' . . . . τ cherished of Ba'alat.'

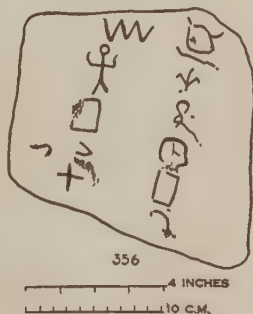
## No. 355

This inscription has disappeared, and it was one of our disappointments not to be able to recover it near Mine XIII, where it must have been. It consists of a small fragment that defies any attempt at rendering. It is interesting, however, because the sign for *heth* (VII) occurs twice, while *gimel* has the same form (III, 4) as in No. 366.

## No. 356 (Cairo Museum, No. 52515)

This little stela, very badly preserved, has been examined by Grimme, Barrois, and Leibovitch. Barrois admits that there are comparatively few signs about which he feels secure.

First column. According to Grimme and Cowley the first letter would be an *aleph*. There is, it is true, the general outline of an ox-head, but the horns would be absent, and instead a horn in the middle of the forehead, like the horn of a unicorn. This horn seems to me to have been chiselled designedly. Yet there is a line on the left-hand corner which might be construed as another horn. In my former rendering I had reconstructed the sign as *shin*, but this would necessitate considering many of the lines as pure weathering, and the other scholars who have examined the slab think that they must have been intentional; at any rate, the sign could hardly be anything but *aleph* or *shin*.



The second sign is *nun* according to everyone.

The next sign is clear, but its phonetic value is not so certain; it is either *kaph* (XI, 5) or, as I had, perhaps wrongly, taken it, a modification of the cross. The first three letters would be *אנכ*, or less probably *אנת* or *אנת*. This is followed by what I had taken for 'ayin and nun, but Cowley and Leibovitch are probably right in seeing here *heth* with weathering.

The next letter, which I had taken for *beth*, is probably correctly read by Cowley as *resh*.

The next letter is a beth of the ordinary type (II, 3); the top of the letter which appears rounded is due to scaling, as is clearly shown by the beginning of a straight line at right angles on the upper right-hand corner. Under the beth, there is what I regard as an unmistakable nun. All these readings are given by Cowley, whom I consider particularly successful in the reading of this inscription. We have, however, no ground to suppose more letters after the nun at the end of the column.

Second column. First, there is a mem, which begins between the columns and extends over the second column; what I had read as zain written on edge, is according to all the others only weathering; Grimme rightly read the following sign as he, so also Barrois, Cowley, and Leibovitch; I had read lamed and nun, but on further examination see that it is really the 'man with uplifted arms.' The other four letters I believe I had read correctly: beth, 'ayin, lamed rewritten to the left of the taw, and taw.

The inscription would then read as follows:

First column אנכחרבן (שנת, אנת)

Second column מהבעלת

Possible word-division: אנך חרבן מהבעלת (שנת, אנת)

אנך Pronoun of the first person, 'I.'

חרבן Seems to be a proper name with the ending ן as noticed above, after Cowley, under No. 352.

מהבעלת Our Sequence No. 3, 'cherished of Ba'alat.'

Translation: 'I am חרבן, cherished of Ba'alat.'

This inscription may have been meant to identify the sleeping-shelter of its owner. Sprengling has practically the same.

If שנת was read instead of אנך I should be inclined to take it as 'sleeping-place,' and render: 'Sleeping-shelter of חרבן, cherished of Ba'alat.' The meaning would be practically the same if we read אנת as in Nos. 349 and 357.

#### No. 357 (still in situ, in Mine XIII [L])

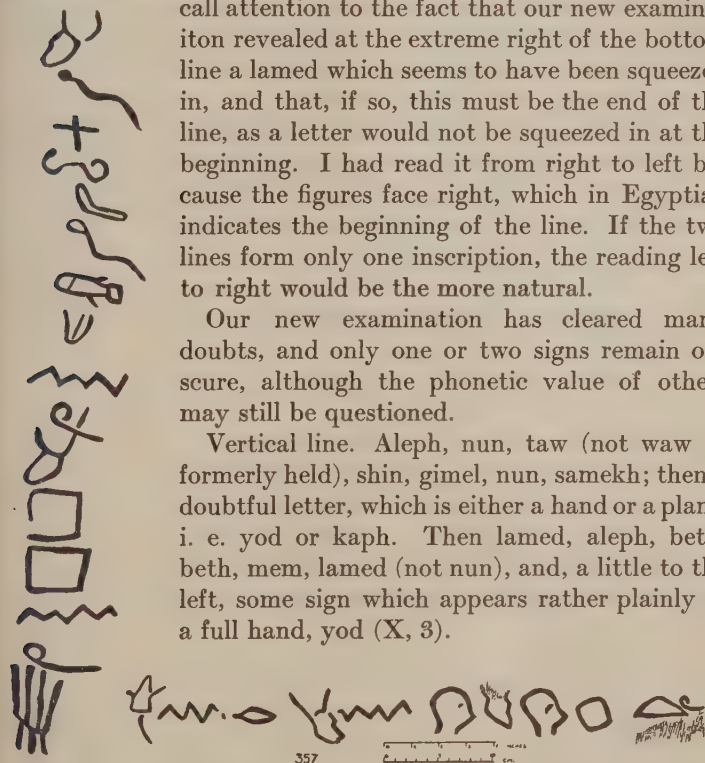
We intended to remove this inscription from the wall of the mine but found that that could not be done without danger to our men. We studied the inscription on the spot, took new photographs, and made a hand tracing on the rock itself. There

are two lines, one vertical and one horizontal. Whether they form two different inscriptions or only one there is no external way of telling; only the sense can guide us. Again, whether the bottom line ought to be read from right to left or from left to right will depend greatly on the sense to be derived. I would

call attention to the fact that our new examination revealed at the extreme right of the bottom line a lamed which seems to have been squeezed in, and that, if so, this must be the end of the line, as a letter would not be squeezed in at the beginning. I had read it from right to left because the figures face right, which in Egyptian indicates the beginning of the line. If the two lines form only one inscription, the reading left to right would be the more natural.

Our new examination has cleared many doubts, and only one or two signs remain obscure, although the phonetic value of others may still be questioned.

Vertical line. Aleph, nun, taw (not waw as formerly held), shin, gimel, nun, samekh; then a doubtful letter, which is either a hand or a plant, i. e. yod or kaph. Then lamed, aleph, beth, beth, mem, lamed (not nun), and, a little to the left, some sign which appears rather plainly as a full hand, yod (X, 3).



Horizontal line. Reading from left to right we have first an unidentified sign (XXIII) which is possibly a kaph with root or stem; then mem, 'ayin, aleph, mem, resh, probably aleph, resh, beth, 'ayin, and lamed.

Vertical line אנת שגן סכ(י)ם לאבבם לי

Horizontal line (left to right) מעאמר ארבעל(?)

Possible word-division:

אנת שגן סכ(י)ם לאבבם לי מעאמר ארבעל

- אנת This is our Sequence No. 7, which occurs also in No. 349 (above, p. 169); here 'mine' or 'cave' used as a shelter.
- ש Relative pronoun.
- ן Sequence No. 11 in the old meaning of 'to prepare,' 'fit,' 'arrange.'
- סכם Possibly a proper name, subject of ן.
- לאבבם ל Preposition. What follows may be a series of proper names. אבבם is possibly a different spelling of the same name as in No. 359.
- לי On a headless statue of Senusert (Sesostris III), the predecessor of Amenemhat III, found in the Lesser Hanafiyyeh, a certain 'A'amu is mentioned whose name is written in Egyptian by the crouching lion Rw (Lw) and the eagle;<sup>28</sup> Flinders Petrie transliterates Lua or Luy. The *w* had probably passed into the simple vowel *u*, which in our inscription would not be written, and Luy would be spelled 'ל.
- מע(?) Probably also a proper name; first letter unidentified.
- אמר Compare the proper name אמר, אמרי. It might also be a gentilicium אמרי, 'the Amorite.'
- ארבעל Urbaal; we find various compounds with אר in biblical Hebrew, and in Byblos we have ארמלך, CIS, I, 1. Ba'al of course enters into a considerable number of names.

The translation which I would propose is:

"Cave (sleeping-shelter) which s-k-m (s-y-m) prepared for 'B-B-M, L-Y, (?)-M-', 'M-R (and) 'R-B-'-L."

#### No. 358 (still in situ, in Mine XIV [M])

Of this inscription we made a new transcription, took new photographs, and feel reasonably secure that we give the signs as they actually are on the wall. It consists of two columns.

First column. There is no doubt that the top letter is aleph. It is followed by the fish samekh, then pe, 'ayin, lamed, mem, and, to the left of mem, lamed. Lindblom<sup>29</sup> does not see the aleph and samekh and reads zain before pe; I find no trace of that zain, but the other two letters are there.

<sup>28</sup> See Gardiner-Peet, *The Inscriptions of Sinai*, pl. XXII, No. 81.

<sup>29</sup> *Altsinaitische Inschrift No. 358*, pp. 94 f.

Second column. This begins with a broken sign; from what is left of it it can only be lamed or else 'ayin written vertically; Cowley has read lamed in his No. 360 from Gardiner's photograph. Lindblom does not consider it a letter.

The next sign is probably kaph (XI, 8). It is followed by a broken sign, probably a yod with three fingers. This could hardly be a kaph of the type XI, 5, as Lindblom claims, for the remnant of the letter below the break is not slanting but evidently a continuation of the right stroke of the letter above the break. The lamed between the columns is on a little higher level than the yod, and hence should not necessarily be read after it; it may possibly, but not probably, have been meant to replace the top sign of the second column after it was chipped.

This would give us:

First column אספעלמ

Second column לכיל (לכי, עכיל)

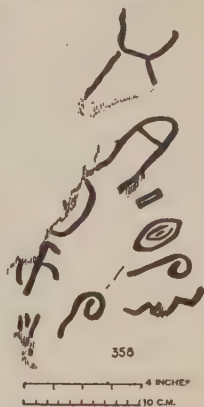
Possible word-division: אס פעל מלכיל (מלכי, מעכיל)

I suspect that אס stands for אש, as in No. 352, followed by 'made' and by the subject.

Translation: 'That which M-L-K-Y-L made.' Milkili occurs in the Tell el-Amarna tablets (250, 16 etc.) as a Southern Palestinian chieftain. Cf. also Num. 26, 45. Of course if we read 'ayin in place of lamed, we should translate 'that which M'KYL made.' On the other hand, if we consider the bottom lamed as intended to replace the top sign of the second column, we should read MLKY, which is the rendering of Lindblom.

#### No. 359 (Cairo Museum, No. 52516)

This small inscription of three letters was brought back from Serabit by the Finnish mission under Professor Hjelt. The three letters are plain. The ox-head has the peculiarity of showing the nostrils. The letters are aleph, beth, and mem. Probably there was a lamed before, as is shown in Cowley from an earlier photograph in possession of Gardiner. The same letters



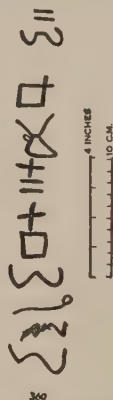
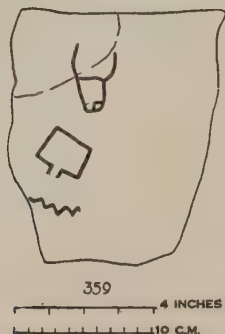
occur in No. 357 with the beth doubled; in No. 359 we might have a case of haplography. In No. 357 we took it as a proper name אבנם, and there is no reason to think otherwise here; probably it indicates the owner of the sleeping-shelter where it was to be deposited.

Translation: '(belonging) to 'B-M.'

### NEW INSCRIPTIONS

#### No. 360

This, as explained, was found in a sleeping-shelter on the ridge between Wadi Qatṭar and Wadi Umm Themeyim. The slab has a blackish patina and is eroded in places. The inscrip-



tion was evidently made after the slab was eroded, as some of the letters try to avoid the erosion lines. There is only one column, and all the signs are perfectly clear. The first beth has a peculiar form (II, 4), but probably this is only an accident and no special significance should be attached to it.

The letters are zain, shin, beth, aleph, taw, zain, taw, beth, shin, nun, mem, shin.

זשב אחות בשן מש

Possible word-division: ז שב אחות בשן מש

ז 'This.'

שב Sequence No. 10, 'the dwelling-place' or 'sleeping-shelter.'

אחוז Here apparently proper name.

בשן מש Our Sequence No. 4 (p. 160), 'in the camp of M-SH.'

Translation: "This (sleeping-shelter) in the camp of M-SH is occupied by '-T-Z-T'."

### No. 361

This inscription was discovered on an undetached small rock near Mine XII (N), which is supposed by Flinders Petrie to be one of the oldest mines at Serabit (Researches, p. 158). At the



present day it would be a poor place for a sleeping-shelter, as the side of the bank has fallen in, but it offered good protection against the wind, and the entrance to the mine could easily be controlled. Our beduin succeeded in detaching this inscription and we brought it to Cairo. The bottom part of the inscription had already been detached, but fitted accurately the upper part. At first we thought there had been scaling since the inscription was written, but on closer examination of the original and of the cast it is clear that when the signs were inscribed the surface of the rock must have been very nearly what it is today. The third column slants to the right to avoid a defective section of the slab.

The inscription consists of four columns. A few letters are missing at the top of the second column, and perhaps one at the top of the third.

First column. Zain, shin, beth, beth, shin, nun, mem, shin.

Second column. Probably two missing letters on top; then zain, taw, mem, he, beth, 'ayin, lamed, possibly a missing letter.

Third column. Perhaps a missing letter, then shin, nun. The next few letters are not certain; I see what seems to be he or perhaps beth; then nun or lamed, mem, he.

Fourth column. Beth. I doubt whether there ever were more letters in that column, although below the beth are possible traces of a letter 'ayin.

First column זשבבשנמש

Second column . . זחמהבעל.

Third column שגזנמה

Fourth column ב

Possible word-division:

ז שב בשן מש . . זח מהבעל. שן הן (בג) מהב

ז 'This,' as in preceding inscription.

שב Sequence No. 10, 'dwelling-place.'

בשן מש Sequence No. 4, 'in the camp of M-SH.'

זח. . Probably a proper name, perhaps to be reconstructed as in No. 360. It may be a genitive of שב the dwelling-place of ATZT; the fact that the construct state is separated from the genitive by בשן מש would offer no insurmountable difficulty, and moreover the genitive may have been preceded by some suitable particle.

(ח)מהבעל Our Sequence No. 3, 'cherished of Ba'alat.'

שן Possibly a missing letter before שן. שן itself seems to be the same as the first word of Sequence No. 4, 'resting-place,' or 'camp.'

הן I take as 'behold,' but this rendering is anything but certain; here possibly הנו, 'behold it is.' If בו is read instead of הנו, it would mean 'built,' that is, 'the one who built the camp.' In that case we should read a relative before וזשן בן שן.

מהב Might be the first element of Sequence No. 3, 'cherished,' but here again this is only a suggestion.

Translation: 'In the camp of M-SH this is the place occupied

by . . z- $\tau$ , cherished of Ba'alat; behold! (the whole) camp is cherished [of Ba'alat]' (or 'the one who built the camp is cherished [of Ba'alat]').

Owing to the uncertainty of the reading of the third column, the latter part of the translation is very doubtful. Leibovitch has courteously sent me his transcription for comparison; he also has had abundant opportunity to examine the original in Cairo. He agrees with me as to the first two columns and the first two letters of the third column, but in the rest of that column he sees beth where I see he; and a sign resembling Phoenician daleth where I read nun or lamed; mem is seen by him also, but the bottom letter is read differently.

It may seem strange that  $\alpha\tau\zeta\tau$  should have had a sleeping-shelter near Mine XII, when he had one further west, as is evidenced in inscription No. 360, but no doubt he would go where his presence was required. The fact that he had an inscription on the rock shows that he was not an ordinary miner.

#### No. 362

This small inscription in the shape of a lozenge was found in a sleeping-shelter above Mine XIII. The face is well preserved and covered with a brownish patina.

There are only two characters and the trace of a third, a little to the left and above the ox-head. This could hardly be anything other than the lower part of the stem of a lamed (XII, 9). The two full letters are without a doubt the ox-head and the door, aleph and daleth.

We do not know what came before, but the meaning of the letters as they are could hardly be anything else than '(belonging) to  $\alpha\tau$  ('D).' Whether this name is the same as that found in Ezra 8, 17,  $\alpha\tau$ , I cannot say.

#### No. 363

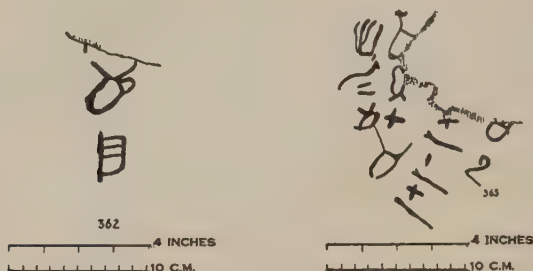
This is a small inscription, 17 x 14 cm., of rectangular shape; surface very smoothly polished and covered with black patina. The right top has been scaled off, carrying the characters away. It was found in a sleeping-shelter just south of Mine XIII (L).

The characters, though perfectly plain, are not well formed, and it must have been the work of an inexperienced engraver. It consists of four columns.

First column. About three letters missing and then aleph and lamed.

Second column. About three missing signs and then taw, nun; here a little line, probably a mere separation, then plainly nun, taw, nun.

Third column. Two damaged characters (1 and 2, p. 152), which seem to be aleph and heth, followed by taw, aleph.



Fourth column. Yod, nun, zain, and what is probably aleph.  
Transcription:

First column אל...

Second column תנ-נת...

Third column אהחא

Fourth column יחא

This inscription seems to me to contain a list of names, possibly of the occupants of that section of the camp, indicating where their sleeping-quarters were. The first ends in 'L; another in TN, probably (. . Na)than; after the division there are three words ending in aleph: NTN', HT', YNZ': אל... תן נתנא : חתא יחא.

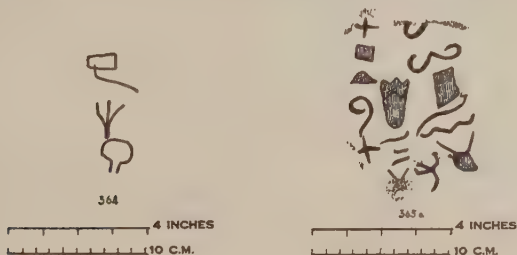
However, this is not beyond doubt.

## No. 364

This little fragment was found in the dump in front of Mine XIV (M); 13.5 x 12 cm.; black patina.

It contains three letters, evidently engraved by an inexperienced hand; moreover it was not engraved with a chisel but scratched with some other sharp instrument.

The three letters are lamed, kaph, and resh full face (XX, 7). The meaning is similar to No. 362 '(belonging) to K-R.' We



have already found the same name in No. 352; but whether it refers to the same individual, we cannot say.

## No. 365a

This inscription was found lying free in the so-called Camp of the Egyptians, and not connected with any sleeping-shelter; its form is trapezoidal, 15 x 11.5 cm. Like the other inscriptions it is engraved on a piece of red sandstone with blackish patina. The little slab is inscribed on both sides, but the writing is quite different on the two sides and evidently not by the same hand. On the recto the characters are very good, while on the back they are relatively poor. The inscription on the back will be examined separately, No. 365b. The inscription on the face is not complete, while that on the back seems to have been written when the stone was already in its present shape.

The face inscription is made up of three columns.

Right column. Probably one missing letter, then shin, shin, beth, nun, mem, aleph, and a he to the left but evidently be-

longing to this column. Beth and aleph are entirely hollowed out by accident.

The signs on the middle column begin much lower down than those of the other two and seem to have been added through lack of space at the end of the left column or possibly as an afterthought. So I think that the left column should be read immediately after the first. The signs in the middle column are, first, some letters which have been chipped off by a false stroke of the chisel. Enough is left for us to recognize possibly a mem and a shin in the upper half (see defective signs No. 3 above, p. 152). As to the lower half, we thought it possible at first to read a resh full face with the eyes like XX, 5, but on close examination it can hardly be that, as the place where the eyes are would be too high to allow for the forehead without touching the shin above. We now think it more probable that we should read a yod of the Gezer type, thus making it mem, shin, yodh; but this is too doubtful to build any reconstruction on it. Below the broken sign are nun, zain, and the horns of an aleph.

Left column. Some letter missing, and then taw, beth, 'ayin, lamed, taw.

Right column ששבו מאה

Middle column מא (שי) to be read last(?)

Left column חבעלח

Possible word-divisions:

ש שכן מאה. חבעלח. ... מא

or

ש שב נ(ם) מאה. חבעלח. ... מא

ש(א) By analogy with No. 352 I would suggest supplying an aleph before the shin. This is of course only a supposition, but as שב occurs elsewhere, it must here also be taken as a separate word.

חבעלח. מאה. If we are correct in thinking that the left column should be read immediately after the first, we should then probably have to read the feminine form of our Sequence No. 2 מאהבחבעלח, 'beloved of Ba'alat.'

שבן (שב נם) The first impression would be to read שבן plural of Sequence No. 10, 'the dwelling-places'; שבן would then be the regens of מאה.מבעלת. The plural שבן would call for the plural מאהב(ו)תבעלת 'dwelling-places of the beloved (ones) of Ba'alat.' The middle column would then contain two proper names.

But perhaps we have to deal with a case of haplography, where another mem should be read after nun of the first column, giving us שב נם 'place for sleeping.' In this case מאהבתבעלת could be in the singular and only one name would be read in the middle column.

We give both possibilities.

Translation: "Places occupied by the beloved (fem. pl.) of Ba'alat, . . . , N-z'."

or

"The sleeping-place occupied by the beloved (fem. sing.) of Ba'alat, . . . N-z'."

Compare No. 363, where YNZ' occurs.

#### No. 365b

The inscription on the back of this slab is by a different hand. It consists of one column rather poorly engraved, and there must be at least one letter missing between the top letter and the next sign actually on the stone.

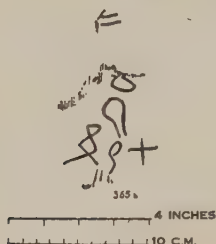
The first letter is undoubtedly zain; then one or two missing letters followed by aleph, resh (full face); then come letters on a horizontal line, and it is difficult to know in what order they should be arranged; from left to right they are heth, lamed, taw. Below the lamed and slightly to the left we have what may be the top of a yod with three fingers, or possibly the three shoots of a kaph.

In No. 353 we have, at the bottom of the second column, aleph, resh, heth, and taw, that is, four of the five letters here considered; however, the lamed between the heth and the taw is written immediately under the resh, while the heth is a little higher to the left; it seems therefore that lamed should be read immediately after the resh. Whether the bottom letter, yod,

should be read after the lamed is not clear; but there is no doubt that nothing came after it, otherwise letters would not have been crowded above it.

So we can read: ארל חתי or ארלי חת; less probably לחי ארח or ארחח לי.

The reading לי ארחח would correspond to the reading in No. 353, but it is not likely that the engraver would have inserted between heth and taw a lamed which would have to be read after them; the reading לחי ארח has the advantage of taking the letters in the order in which they appear, reading left to



right. In this case ארח would probably have the same meaning as ארחח of No. 353 'the caravan,' 'troop,' or 'gang.' But I consider either of the other two possibilities more likely.

The initial zain is of course the demonstrative. I suspect that we should insert something between zain and aleph, and would suggest either שב, as in 369 and 361, or ל, as in 359, 362, and 364.

Transcription: 
$$\left. \begin{array}{l} \text{ארל חתי} \\ \text{ארלי חת} \\ \text{ארחח לי} \\ \text{ארח לחי} \end{array} \right\} \begin{array}{l} \\ \\ \\ \end{array} \begin{array}{l} \\ \\ \text{(שב or ל)} \\ \end{array}$$

Translation: 'This is the sleeping-shelter of (this belongs to) 'R-L, the Hittite (or 'R-L-Y, the Hittite).'

Less probably, after the analogy of 353: 'This (belongs, is reserved) to the caravan (troop) of L-Y (Luy ?), or 'this belongs to the caravan of L-T-Y.'

But all this is conjectural.

## No. 366

This is a small inscription found at the opening of Mine XIII (L), a little inside the mine; size 12.5 x 8.5 cm.

It consists of three letters, but is very probably incomplete at the beginning, although there do not seem to have been any more letters at the end. The first letter is mem, the second doubtful but probably mem or nun, and the last gimel of the type III, 4, as in No. 355.

This is probably a proper name, ממ. (ממ), but we do not feel that we can venture any suggestion as to the import of the inscription.

## No. 367

This inscription, in the form of a stela, was found in a sleeping-shelter south of Mine XIII. Originally the slab on which the inscription was engraved was much larger. Our Arabs removed what was not necessary, in order to make its transportation easier. It is interesting as showing for what use the other stelae found by Flinders Petrie were probably destined. We have already remarked that in almost all sleeping-shelters there were inscribed slabs (Sinaitic or Egyptian), but that in their present condition all writing has been worn out beyond recognition.

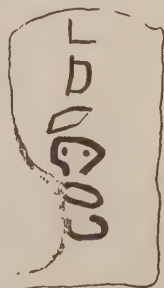
The inscription contains six letters written vertically, and is complete.

The letters are gimel (III, 6), daleth, 'ayin, resh (full face with the eyes), 'ayin, and what may be shin. But this last identification is not absolutely beyond doubt. The sign seems to have a return line to the right, but in reality on the original and the cast this curve does not show as belonging to the letter but is a continuation of the erosion from the left. This is also the opinion of Barrois.

גד ער עש

Possible word-division:

גד ער עש



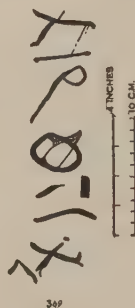
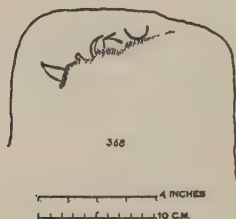
367

4 INCHES  
10 C.M.

- גד Seems to be a proper name.  
 ער I should be inclined to render this, as in No. 349, by 'the 'Erite.' 'Eri is a son of Gad in Gen. 46, 16; cf. Num. 26, 16, where 'Eri is also a patronymic.  
 עש Possibly third person singular of עש (עשה) 'to make.'  
 Translation: "G-D, the Erite, made (this)."

## No. 368

This little inscription, in the form of a stela, shows the remains of letters at the top, but everything else has been eroded, and its principal importance is to illustrate how those



small stelae were prepared and used. It was found in a sleeping-shelter near Mine XIII (L), and probably contained the name of the occupant of that shelter. Apart from the traces of an aleph and a lamed nothing is recognizable.

## No. 369

This inscription is on the left side of a statuette, 53 cm. high, the face of which is covered with Egyptian inscriptions. It was discovered in the temple, and at first we thought we had in hand the much desired bilingual inscription, but our hopes were soon doomed to disappointment. Most of the Sinaitic characters are illegible. It must have been some kind of votive offering to Hathor, like Nos. 346, 345, and 347. Only the second letter (lamed) and possibly the third ('ayin) are tolerably certain.

## No. 370

This was found at a short distance south of Mine XIII a few steps from the place where No. 367 was found. It is a little fragment and its resemblance in shape to a stela is probably a mere accident, for there is no trace of the characteristic groove of the stela. Its dimensions are about 20.5 x 14 cm.

It is doubtful whether this was intended as an inscription; it contains a cross and a bird, repeated. The long neck and bill of the bird might point to the ibis (bnw), but the eagle may have been intended and we cannot be sure. What is engraved



seems to be a mixture of Sinaitic and Egyptian, and possibly we should read, with an eagle,  $\text{חא}$  'room' or 'lodge,' or here 'sleeping-shelter.' Again the sign may stand for  $\text{חאי}$  'my sleeping-room.' Why it is repeated I cannot say.

On the assumption that an ibis is intended, we should have T-B-N-W, probably a proper name; note that  $\text{חבני}$  occurs in 1 Kings 16, 21 f. The whole may well be a mere graffito, with no special intention.

## No. 371

Apparently a mixture of Sinaitic and Egyptian is also to be found in this little triangular inscription, discovered like No. 360 on the ridge between Wady Qaṭṭar and Wady Umm

Themeyim. It contains three characters, of which the second is evidently beth. Taken by itself the first sign might also be beth, but the engraver evidently intended a different sign from the second one; it is much smaller, and, unlike beth, the corners are rather well rounded out so that it has the appearance of a lozenge, recalling the form assigned by Grimme to waw. The last sign seems to be the Ba-bird. Thus we gain W-B-Ba, the first two in Sinaitic and the last in Egyptian. Now among the officials of the mines of Serabit was a certain 'inspector' Uba. Could our description be a facetious attempt at writing Uba in Sinaitic letters with the Egyptian determinative? I give this for what it is worth, but it is the only plausible explanation I can suggest for this puzzle.

It is interesting to note that according to Flinders Petrie (*Researches*, p. 115) these 'inspectors' were found only in the expeditions of the XIIth dynasty. It would be natural that the Semites living among Egyptians and working for them should occasionally use a mixed alphabet.

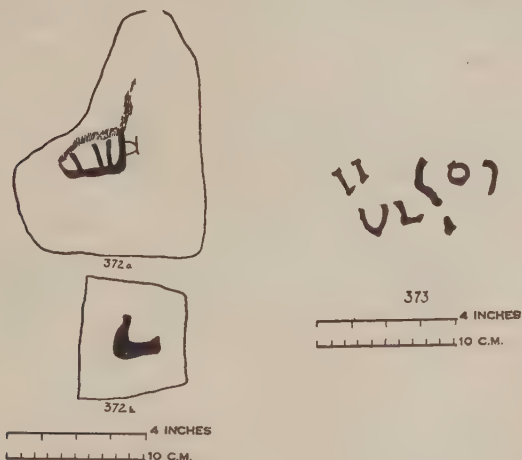
#### Nos. 372a and 372b

We record these two signs simply to show what are possibly workmen's marks, but possibly a means of identification of sleeping-shelters for illiterate miners. They were found in a sleeping-shelter just south of Mine XIII. One looks like dalet and the other resembles gimel. We found many such marks in the sleeping-shelters, but most of them do not resemble letters, being only signs or dots.

#### No. 373

This inscription was found on a flat projection of the cave wall in the cave behind and communicating with Mine XIII (L). It was detached by our beduin in a slab 52 x 30 cm. It is covered with a yellowish engobe or slip; the characters are different from the ordinary Sinaitic signs. It is almost impossible to assign values to these half-dozen characters. Moreover, after our experience on Umm Rijlein, where in place of an expected Sinaitic inscription we found the name 'Murray,'

as again on a temple stela we read 'Boston, U. S. A.,' there is always a lurking possibility of some modern cryptogram. From the resemblance of the signs to the ordinary Serabit alphabet we should be tempted to read zain, then (on the second line from right to left) lamed, waw, or 'ayin, nun, gimel, and a



new sign. This would give us זלון ג. or זלעג, 'this is the night lodging of G.,' or 'this belongs to 'NG.' But this is all too doubtful to be offered seriously.

## Doubtful and Special Inscriptions

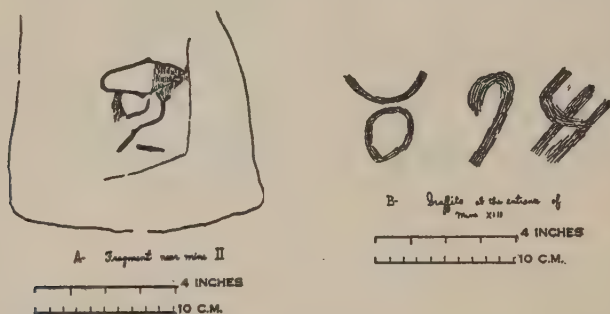
### A. Fragment near Mine II

This slab was found east of Mine II (A), and thus in a locality far removed from Mine XIII. Some of the party thought there were characters engraved on it, but I do not think so. One of the marks looks like 'ayin, but beyond that I do not see anything of the nature of a sign.

## B. Graffito at entrance of Mine XIII

This little graffito above the entrance to Mine XIII is not engraved but merely scratched. It was discovered at the last moment of our stay, and at first seemed to be no more than accidental markings, not an inscription. Gradually, however, the outline of the letters became more apparent, and we finally decided to publish it in the hope that it may be tested at some future date.

The photograph having proved a failure, we have only a hand tracing from the original rock. The space occupied by the three



letters that constitute the graffito is 19.5 cm. in length by about 7 cm. in width. Reading from left to right the letters are aleph, lamed, and yod (with three fingers and a wrist somewhat resembling the last sign of the vertical column of No. 357).

If read from left to right, we have אל; if from right to left, לא, possibly the name of the person who did the scratching.

## C. The Gezer Fragment

As noted above, a fragment of pottery with letters was discovered at Gezer in December, 1929, by Mr. Douglas James of the American School of Oriental Research in Jerusalem.<sup>30</sup>

The pottery, which belongs to the early part of the Second Bronze Age, contains three clear letters: beth, nun, and yod.

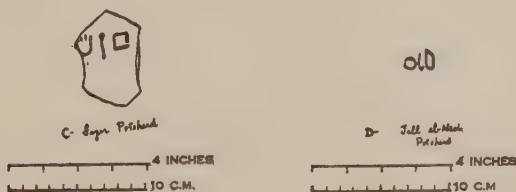
<sup>30</sup> See plate XXVIII.

This yields either the singular, . . . בן 'son of י . . .' or less probably a construct plural, . . . בני 'sons of . . .'

The importance of this fragment lies in its evidence that the protosinaitic alphabet was used in Southwestern Palestine at so early a date, for in view of the general appearance of the potsherd there is no doubt that it comes from the surrounding country, with its whitish clay. The inscription was certainly made before the baking of the clay.

#### D. The Tell el-Hesi Fragment

In the fourth stratum of Tell el-Hesi, Bliss found a piece of a plate with three letters on it (see *A Mound of Many Cities*, p. 88). The sherd belongs to the 13th century B.C., as Albright has shown ('A Neglected Hebrew Inscription of the Thirteenth Century,' in *Archiv für Orientforschung*, V, 1929, pp. 150 ff.).



The characters are of mixed Sinaitic and Phoenician type. Sayce read the letters correctly as בלע. The beth is still close to the Sinaitic form, although far more rounded at the base, and bears little resemblance to the beth of Ahiiram, which is roughly its contemporary. The lamed shows the general form of the Sinaitic, but is nearer to the Phoenician; the loop is at the bottom, as it never is in the Sinaitic inscriptions of Serabit. "The 'ayin is intermediate between the eye-shaped Sinai 'ayin and the roughly oval Byblos form." Albright is probably right in reading a proper name: Bela' (Gen. 36, 32; 46, 21; Num. 26, 38 ff.). Whether he is also right in arguing from the differences between the potsherd and the Ahiiram inscription that the Ahiiram inscription is later, is doubtful. Even granting that the Phoenician alphabet is derived from the protosinaitic, which

has not been proved, it does not follow that the development went on at the same rate in all places. It is conceivable that in some respects it might have proceeded much faster in Byblos than in the South. There is no doubt, however, that the Tell el-Hesi script is derived from the protosinaitic, and that in the 13th century forms appear which are much more cursive than the Serabit series and have been affected by the use of material softer than stone.

### § 7. *Conclusions*

The provisional conclusions at which we have arrived are briefly as follows.

The protosinaitic inscriptions date from the end of the nineteenth or beginning of the eighteenth century B.C. The language is Old Semitic, but we make no assertion as to the branch to which it belongs. The script is an imitation of the hieroglyphs, but does not seem to be a direct borrowing. The Phoenician script is connected with it, but whether as a direct descendant or a parallel development is doubtful. The protosinaitic script admits of many variations in the signs. We agree with Grimme that the shape of the letters shows more analogy to the Southern Semitic alphabets than to those of the North. With one possible exception (No. XXIII, the value of which is not established) there seem to be no duplicate signs for the same sound. The alphabet seems to have the same number of signs as the Northern Semitic group, but, as we pointed out in our former article (p. 11), it is theoretically possible, though we find no such case, that certain signs may have represented more than one sound. The *matres lectionis* are seldom written, and, so far as we can judge, there is no occurrence of the article.

Apart from the votive statuettes found in the temple, most of the inscriptions seem to refer to sleeping-shelters, caves, and mines where the miners slept and protected themselves against the wind and sand. Almost all belong to the section of the plateau where the camp of the Semites was established. For reasons of order and method, or simply in order to reserve their property for their own use, some of the principal miners had

their shelters or caves marked with their names; occasionally a certain section of the camp was reserved to a gang. To our surprise some of the names seem to be names of women, and in No. 365a one of these is called 'beloved of Ba'alat.'

A further study of the proper names — personal, patronymic, gentilic, geographical, with a view to determining the country whence the authors of the inscriptions came would be interesting, but until the readings and their interpretations are more securely established, that would be premature. Besides Sinai proper, we may conclude on the basis of present knowledge that Southern Palestine, Edom, Moab, and possibly Syria furnished contingents to the expeditions which have left traces of their presence in our inscriptions.



## NOTES

### NEW BIBLICAL PAPYRI AT THE UNIVERSITY OF MICHIGAN

UP TO this time there have appeared three notices of the great treasure of biblical papyri in the possession of Mr. A. Chester Beatty — the first by Sir Frederic Kenyon in the *London Times* (November 19, 1931), the second by the same writer in *Gnomon* (January 1932, pp. 46-49), the third by Professor Carl Schmidt in the *Zeitschrift für die neutestamentliche Wissenschaft*. I have seen the last only in an undated offprint which reached America about March 15; the communication was sent to the printer in December 1931. Since a small part of the now famous find has come into the possession of the University of Michigan, it seems desirable to offer more precise information about these pieces.

There are in the University Library six leaves of a codex which contained the latter part of Enoch and an unidentified Christian work. The Beatty collection contains eight leaves of the same codex — four of Enoch, four of the Christian text — and perhaps fragments of others. Two of the six Michigan leaves belong to Enoch, and four (not two, as Professor Schmidt has it) to the Christian text. All are nearly but not quite complete. The two leaves of Enoch contain chapters 100, 1-101, 7 and 103, 14-106, 7. These points of interest may be noted. First, the work is referred to as "this letter" in ch. 100, 6, which is in keeping with the title "The Letter of Enoch," found by Kenyon on one of the Beatty leaves at the end of the book. Secondly, ch. 105, which had already been viewed with suspicion, is omitted entirely. Thirdly, although there has not yet been time to study the text in detail, it is clear that the Greek text confirms certain readings of the Ethiopic which R. H. Charles had regarded as corrupt and therefore emended.

The four leaves of the unidentified Christian text are shown by some surviving page-numbers to articulate closely with those in the Beatty collection. It is probable, though not yet certain, that the two groups taken together will present a continuous text. But the contents of the Michigan leaves lend no support to the view, which was at first considered possible, that there were really two different Christian writings following Enoch in the manuscript. It is true that in the

earlier passages the writer is dealing with the institution of the pass-over and describing the slaying of the first-born, while later on there is a rhetorical treatment of the passion of Christ and a denunciation of the Jews for their incredulity. Yet these themes are compatible if we assume the work to be a discourse of typological tendency; and, in fact, the Michigan leaves show that the writer takes the passover as a type of the passion of Christ and the congregation of Israel as the pattern of the Church. Hence the Jews are condemned for rejecting the Messiah foretold by type and prophecy and refusing to enter the appointed fold.

As regards the date of the codex, I incline strongly to the earlier rather than the later of the periods which Sir Frederic Kenyon considers possible. Notwithstanding the irregularity of the hand and the illiteracy of the scribe, I see no reason for placing the manuscript later than the fourth century.

Besides the leaves of Enoch and the unknown Christian text, the University of Michigan has eight fragments of the third Old Testament manuscript in the Beatty collection (second century). These fragments, which, though easily legible, are all quite small, belong to Deuteronomy, chap. 11 and chaps. 28-32.

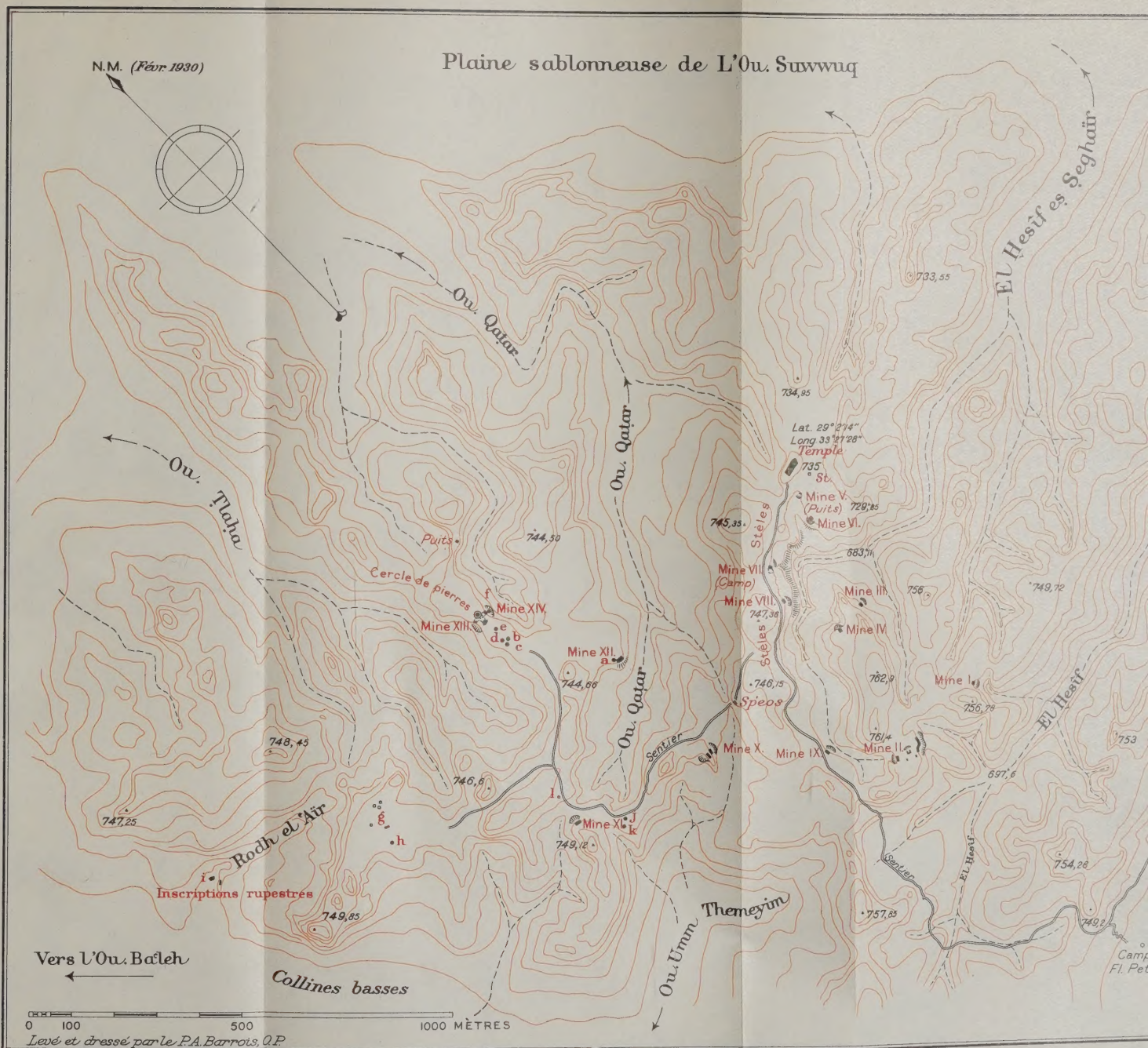
The pieces here described were all acquired before the existence of the larger collection was known to us. The inconvenience resulting from the separation of one or more parts of this find from the main stock is not to be denied; but there is no occasion for so pessimistic an opinion as that which Professor Schmidt expresses about the effects of that separation upon the work of editing. Coöperation among scholars is not an unheard-of thing, and the distinguished editor of the Beatty manuscripts is not likely to be hampered by lack of information about the outlying texts.

CAMPBELL BONNER.

ANN ARBOR, MICHIGAN,  
March 21, 1932.

# SERABIT EL KHADEM

Plaine sablonneuse de L'Ou. Suwwuq



Levé et dressé par le P.A. Barrois, Q.P.

Reproduced by the Survey of Egypt 1930(30/384)

